ONE SHILLING

The MODEL RAILWAY NEWS

VOL. 28 No. 333 SEPTEMBER 1952

A PERCIVAL MARSHALL PUBLICATION

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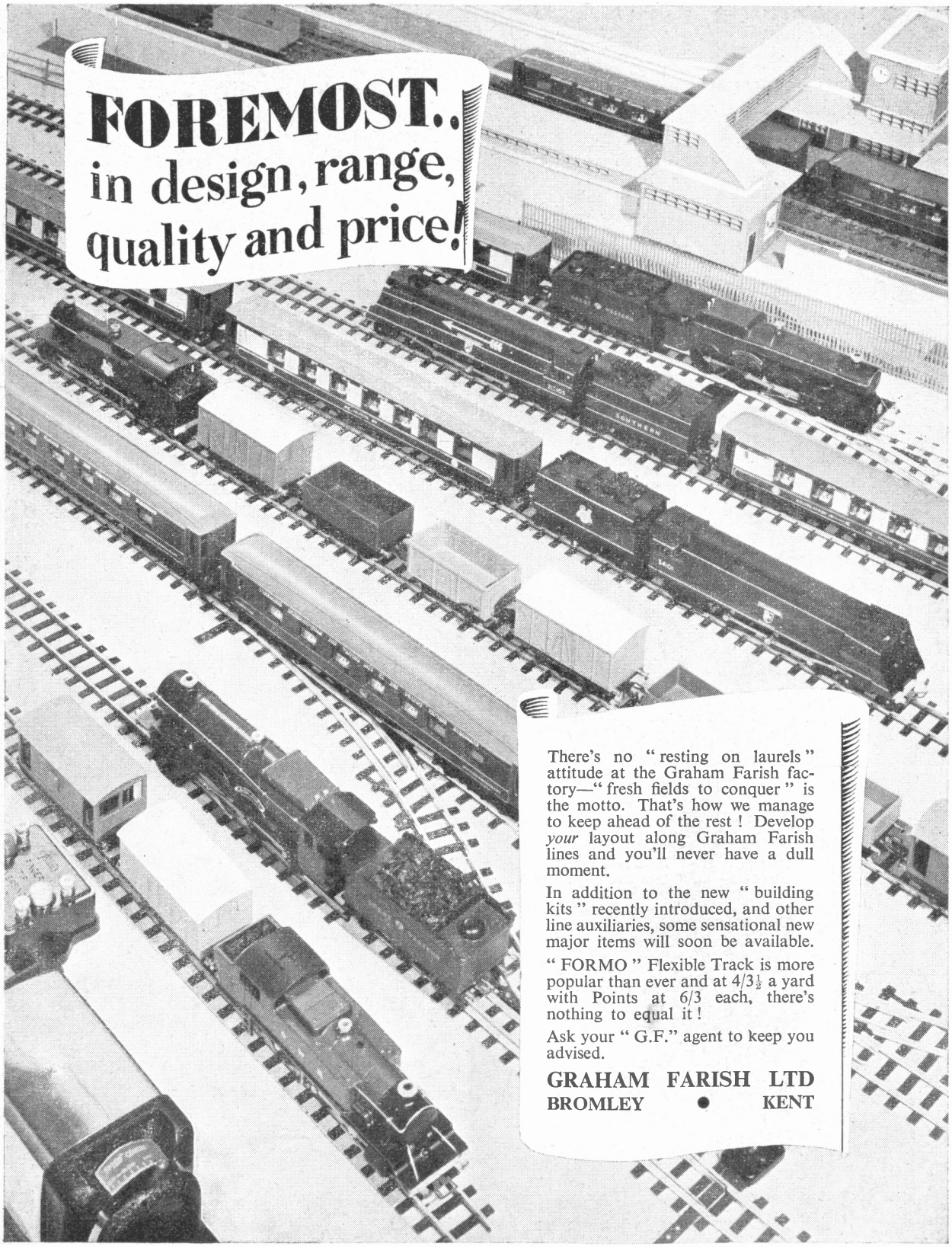

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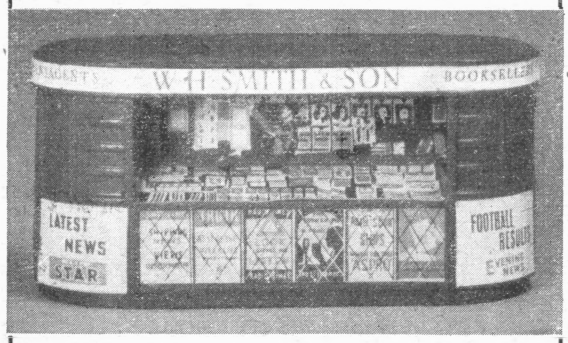

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M Racing Cars (self propelled).
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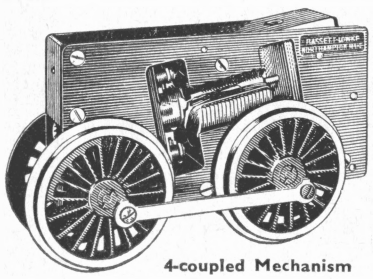

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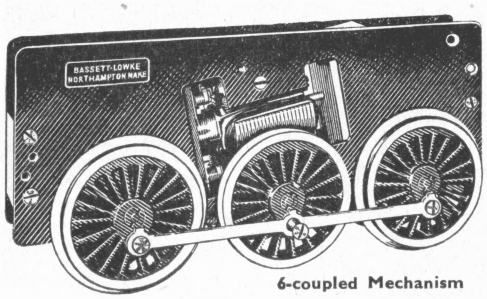

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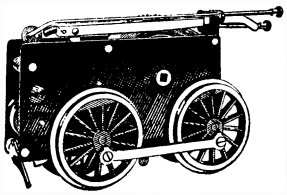

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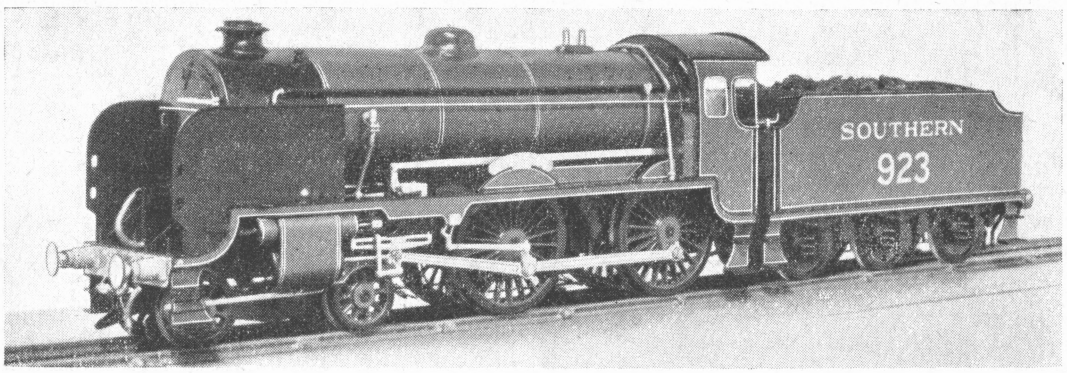

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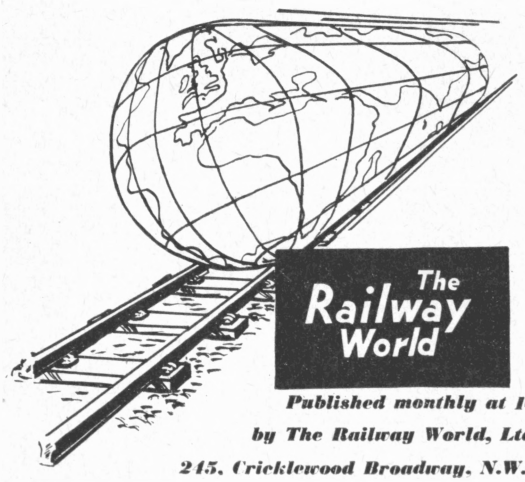

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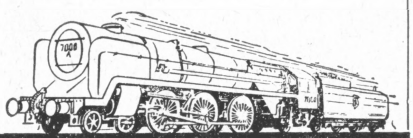

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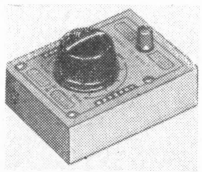

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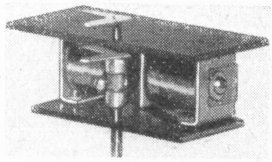

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The MODEL RAILWAY NEWS

Vol. 28 No. 333 September, 1952

Editorial Offices :
23, Great Queen Street, London, W.C.2.

CONTENTS

Notes of the Month 181
Great Western Coach Drawings .. 183
Garve Station, Highland Railway .. 186
Auto-Coupling for Stud Contact Layouts 190
This is "O" Gauge 192
B.R.M.S.B. Recommended Dimensions for Stud Contact 195
Railway Topics 197
Talking Shop 200
The Gauge One Association Has A Day Out 202
For the Bookshelf 203
With the Clubs 204

Notes of the Month

IN our August issue we reproduced a snapshot showing some members of the B.R.M.S. Bureau during a recent meeting at which the subject of standard dimensions for the stud contact system of model railway electrification was under discussion. The snapshot was taken by Mr. C. W. Atkin (member) and the members who are visible are, from left to right, G. H. Platt, G. H. Lake, J. N. Maskelyne and F. R. Kaye.

In this issue, we publish the details of the recommendations which have been decided upon as a result of that meeting. Some people may be surprised to learn that so much can be made out of fixing studs in sleepers ! If all stud-contact layouts consisted of plain straight track, there would be very little to settle; but at points and crossings, the relative clearances between studs, rails and skates are vital to trouble-free running, and they must be kept within definite maximum and minimum dimensions as set out elsewhere in this issue.

The recommendations are the result of a good deal of mathematical calculation on the part of Mr. G. H. Platt, who also built up a trial mechanism for practical testing, and some track construction work on the part of Mr. Michael Longridge. Through the efforts of these two gentlemen, the Bureau was able to carry out some practical testing, and to examine the effects of modifications suggested by individual members, only to be forced to the conclusion that the figures now published are the safest.

Can We All be More Helpful ?

Our comments in the July issue, referring to the attitude of young enthusiasts, attracted the attention of Mr. P. D. McCann, of Worcester Park, Surrey, who offers some useful remarks. He states that there is an increasing tendency for people, not only the young, to say: " Let me look at your copy and see if it is worth buying this month." There exists a very healthy desire for a sound knowledge of railway and modelling matters, especially among the " make it yourself " fraternity, who, although they are prepared to learn for themselves, prefer to save time by learning from other people's experience.

Most modellers have a general appreciation of what is wanted, but it is detailed information which they lack and cannot always readily obtain. Many contributors might be more specific when describing materials and methods of construction. Dimensions and quality of material are very important to the novice—and not to the novice alone.

As an example, Mr. McCann quotes the following from the May issue, page 105: " The locomotive frames . . . are German silver strip with bushes soldered inside to take the axles; they were, of course, bolted together during shaping . . .", and suggests that this would be improved by such small additions as details of the thickness of the strip and the material of the bushes. Probably, they were about 16 s.w.g. and brass, but the novice might not know this. The attitude of many contributors, as summed up by the " of course " in the quotation, is at fault. Why " of course " ? The author is not writing for those who know how to do the job.

Fortunately, there are other contributors who are fully alive to the needs of their readers and realise that practical information must be complete if it is to be of real value; but we concede to Mr. McCann the points that he raises. After all, we may not be entirely blameless ourselves, although, as we stated in our July note, we are ever cognisant of the fact that the youngster, as well as the novice, must be catered for. The most helpful information is the most complete, and many contributors would do well to remember that !

Lost or Strayed

On June 12th last, a package posted by Mr. Lardham, of New Malden, Surrey, to Mr. W. G. Kelly, of Ilford, Essex, failed to reach its destination. It contained two Gauge " 1 " Bassett-Lowke electric mechanisms which had been repaired. They are of permanent-magnet type with end plates, armatures and brush gear, new bright brass side plates and fluted coupling-rods. Both are worm-drive, and one has 2-in. wheels and the other 2¼-in. wheels, mounted on axles.

There is reason to believe that this package has strayed into other hands who may attempt to dispose of the contents. If any reader should see a

mechanism that might be one of the missing ones, he is asked to get into touch with Mr. Kelly, 8, Haigville Gardens, Barkingside, Ilford, Essex. Tel.: VAL. 5415.

Our Cover Picture

On Sunday, July 20th, we had the pleasure of accompanying a party of members of the Reading Society of Model Engineers and friends to take part in a tour of some of the less-frequented byways of British Railways, Western Region, in Berkshire, Oxfordshire and Buckinghamshire. A Western Region diesel railcar, No. W15W, was used, and the tour was from and to Reading by way of Newbury, Lambourn, Oxford, Thame, Princes Risborough, High Wycombe and Maidenhead. Reversals were necessary at Lambourn, Oxford and Maidenhead, and a certain number of special stops were made at interesting places en route. The party took a picnic tea at Thame station, which was probably the first time that the station, or possibly any other, had been used for such a purpose by an organised party.

Mr. M. W. Earley took the fine photograph reproduced on our cover; a special stop was made to enable this to be done, at a picturesque spot in the cutting near Speen, on the Lambourn Valley line.

The whole tour was carried out without a hitch and was much enjoyed by all who took part in it. The driver of the railcar indulged in a little speed display at two different parts of the route; the first was between Kennington Junction and Thame, where the speed indicator showed a maximum of 68 m.p.h., and the second was between Maidenhead and the end of Sonning Cutting, when a steady and exciting 70 m.p.h. was maintained over nearly the whole distance of eight miles.

Incidentally, the second photograph, also by friend Earley and reproduced herewith, shows the car at Thame station, during the tea interval. The station is full of interest; the " all-over " building is typical of the designs of I. K. Brunel, and of many other G.W.R. stations which, however, have long since been rebuilt.

In the background, can just be discerned a curious track layout, a kind of half-scissors crossing. There is a trailing crossover from the Up road (on which the car is standing) to a siding on the Down side, while the Down road itself crosses the crossover to lead into the single-track main line in the direction of Oxford.

Another " prize " that was duly photographed was the Up starting signal, which is one of the old standard G.W.R. arms on a rather tall lattice-type post, quite a rare combination on the G.W.R.

Model Engineering in the Welsh Ideal Homes Exhibition

The Cardiff Model Railway Guild has been invited by the promoters of the Welsh Ideal Homes Exhibition, to be held at Sophia Gardens Pavilion, Cardiff, in November, 1952, to organise an exhibition of model engineering, as part of the main exhibition. Many clubs and model engineering societies have already agreed to support the project and to exhibit models.

This exhibition will be the largest of its kind to be held in South Wales and it is hoped to have as many local clubs as possible represented, as it will be an excellent opportunity to bring the various branches of the hobby before the public in South Wales.

Will the secretaries of all model clubs and societies in the district who are interested, apart from those already contacted, please communicate with the hon. secretary of the Cardiff Model Railway Guild, L. C. Humphries, 8, Vaughan Avenue, Llandaff, Cardiff. Tel.: Llandaff 1196.

GREAT WESTERN

COACH DRAWINGS

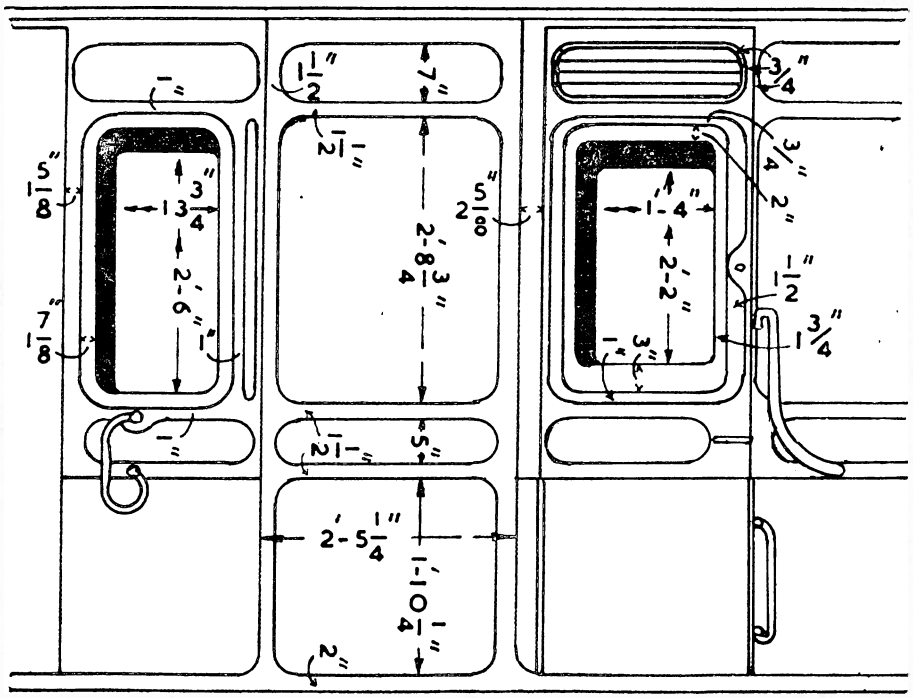
No. 16. 56ft.

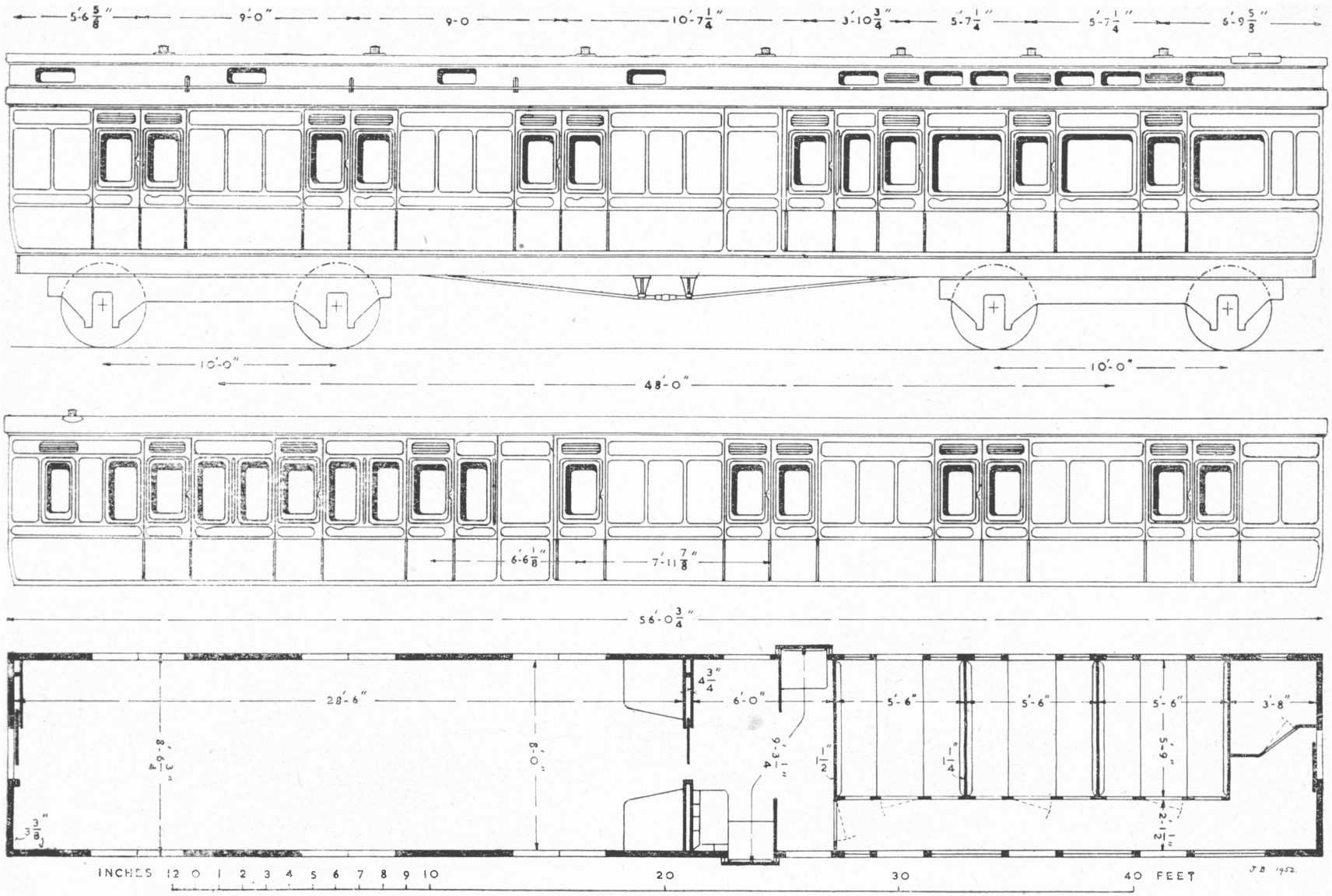
CLERESTORY BRAKE THIRD

by J. E. D. Binney

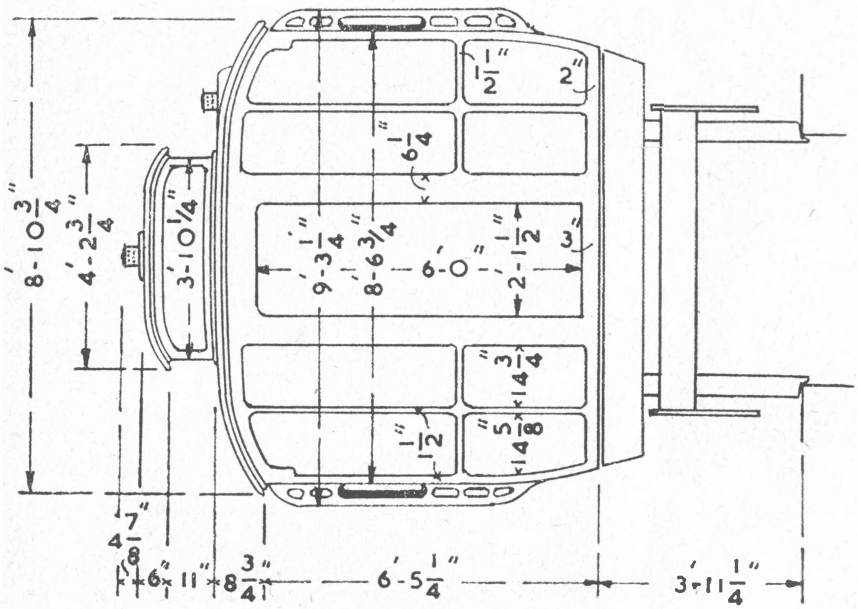
CLERESTORY corridor brake thirds were normally left hand vans. The earliest corridor train, which was originally equipped with flexible gangways at one side of the ends, and not at the centre, was intended to run in fixed formation with the third class accommodation on the left, looking at the corridor side of the train, the first class in the middle, and the second to the right. Hence the brake third was left hand van, and this precedent being set the authorities followed it with relatively little exception. For the same reason, no doubt, the few designs of corridor brake second, of which one was illustrated in the *Model Railway Constructor* for August, 1944, were right hand van. The type illustrated this month was a standard design of which it seems that fifty were built, with serial numbers 2332-2341, 3301-3310, 3351-3370, and 3445-3454; but something would appear to have happened to the original 2340, for the coach carrying this number in recent years was of a different design. There was no right hand van version corresponding, as there was with the contemporary four-compartment brake third.

Amongst other things the side elevations illustrate three points of latter day practice. Firstly: The guard's door was to the right of the wing on each side. Consequently the wings were "staggered" and not opposite to each other. Many of these wings were ultimately removed, and a steel panel substituted. These removals began for some types not later than 1914, and continued generally until the late nineteen-twenties when, it is said, a question in Parliament brought them to an end. Many coaches therefore retained their wings all their days. Secondly: There are clerestory lights over the luggage space, of the same size as for third class compartments, that is to say 20 in. long by 8 in. deep. These lights were centred midway between the pairs of double doors, and midway between the centre lines of the first and of the third pair and the *inside* of the end wall and the double partition respectively. Thirdly: The portion of




5'-6 5/8"
9'-0"
9-0
10'-7 1/4"
3'-10 3/4"
5'-7 1/4"
5'-7 1/4"
6'-9 5/8"
10'-0"
10'-0"
48'-0"
6'-6 1/8"
7'-11 7/8"
56'-0 3/4"
28'-6"
4 3/4"
6'-0"
5'-6"
5'-6"
5'-6"
3'-8"
8'-6 3/4"
8'-0"
9'-3 1/4"
1 1/2"
1 1/4"
5'-9"
2'-1 1/2"
3 3/8"
INCHES 12 0 1 2 3 4 5 6 7 8 9 10
20
30
40 FEET
J B 1952.

the roof over the luggage space, which was unsupported by partitions, was strengthened by angle irons in the positions shown in the elevations. Incidentally, such angle irons were also provided over the " open " portion of the 54 ft. third, illustrated in the February issue, and some other similar designs, being placed at the points where there would have been partitions if that part of the coach had had compartments. Other matters which may be noted include the position of the lamp tops over the pairs of double doors. It is rare to find a vehicle of the clerestory period which has a lamp top over the centre line of a pair; almost invariably it is on the centre line of one or other leaf of a pair. The lamp top over the guard's compartment is midway between the partitions. Finally, there is the overhang of the roof, which amounts to 2½ in. at each end.



Many of these brake thirds were adapted for electric light. This normally resulted only in the removal of the lamp tops, leaving the disc mountings on both upper and lower decks; but in a few instances even these mountings were removed. Information is not available as to all the vehicles so adapted, nor as to all those which lost their wings; but photographs will often assist in choosing a correct serial for a model showing these alterations. Photographs should also be examined for the brake cylinders; the normal rule was to provide only one of these, but two cylinders were not unknown with the present design.

The sketch of part of a side gives detailed measurements, most of which were standard over a long period. But it should be noted that the distance of 1⅝ in. from the door opening to the bolection moulding round the window, though correct for the period, had in the early eighteen-nineties been only 1 in., and by 1913 at the latest was destined to increase to 1⅞ in. Again, the distance of 2⅝ in. from the side of the wing to the adjacent door opening appears in certain earlier designs to have been less, and in others great enough to allow of a tiny upright panel.

From the end elevation it can be calculated that the projection of the wings beyond the mouldings of the body was 4¼ in. on each side. With a body only 8 ft. 0¾ in. wide the projection was 7½ in., the extreme width over wings being the same in both cases. The actual height of the side wall of the body may be a fraction of an inch greater than the figure marked, as it is not clear from the drawings which have been consulted whether the measurements are taken to the cornice or to the under edge of the roof, which, because it projects at an angle, descends below the level of the cornice. The distance from the base of the body to the top of the lower deck of the roof at its highest point is 7 ft. 2½ in., or slightly more than at the sides of the clerestory. If the end elevation is compared with that illustrated in the February issue a small difference in the mouldings at the cornices will be apparent. The end drawn this month is the compartment end, and the difference is caused by the Train Alarm Signals. A photograph in the February issue shows this apparatus, which, in any passenger carriage with a guard's compartment, was always fitted at the end farthest from the van. In corridor carriages without a van the signals were fitted at the right hand end, looking at the corridor side. The arrangement of mouldings at the end not fitted with signals was as shown in Mr. Longridge's elevation referred to.

The contours of both upper and lower decks of the roof were those of three-centre arches, neither deck having any flat portion. This is a small detail, but an eye accustomed to the slight curvature of the original at once notices its absence in a drawing or model. The large radius of the middle part of each deck is as much as 48 ft., measured to the underside of the roof. The small radius of the lower deck was 4 ft., apparently at centres 3 ft. above the base of the body and (for

(*Continued on page* 196)

GARVE STATION, HIGHLAND RAILWAY

by H. S. Orbach, A.R.I.B.A.

THE station building is constructed of the local stone, with very thick mortar joints, and the pitched roof is covered with slates. The ground floor accommodates the booking office, booking hall and waiting room, whilst the first floor is given over to the stationmaster's flat.

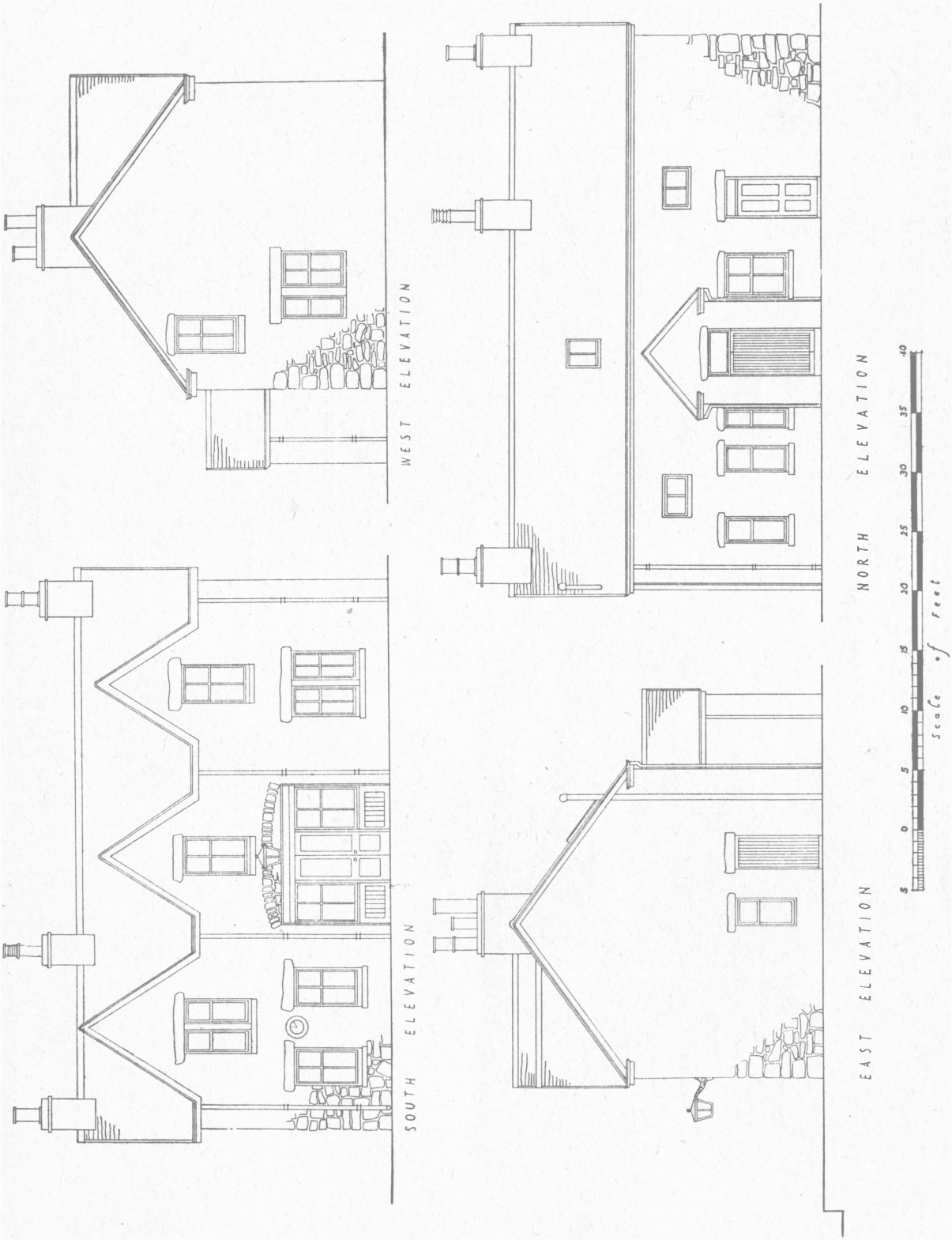
On the left hand side of the booking hall, looking from the platform, is the door leading into the booking office. A corresponding door gives access to the waiting room.

It will be noticed that poster-panels have been deliberately omitted, as they were added after the amalgamation of 1923. The corrugated iron shed has also been omitted from this series as it was built to afford protection to the transfer of mail into the Ullapool mail coach, a superfluous operation had the Garve & Ullapool Railway been built.

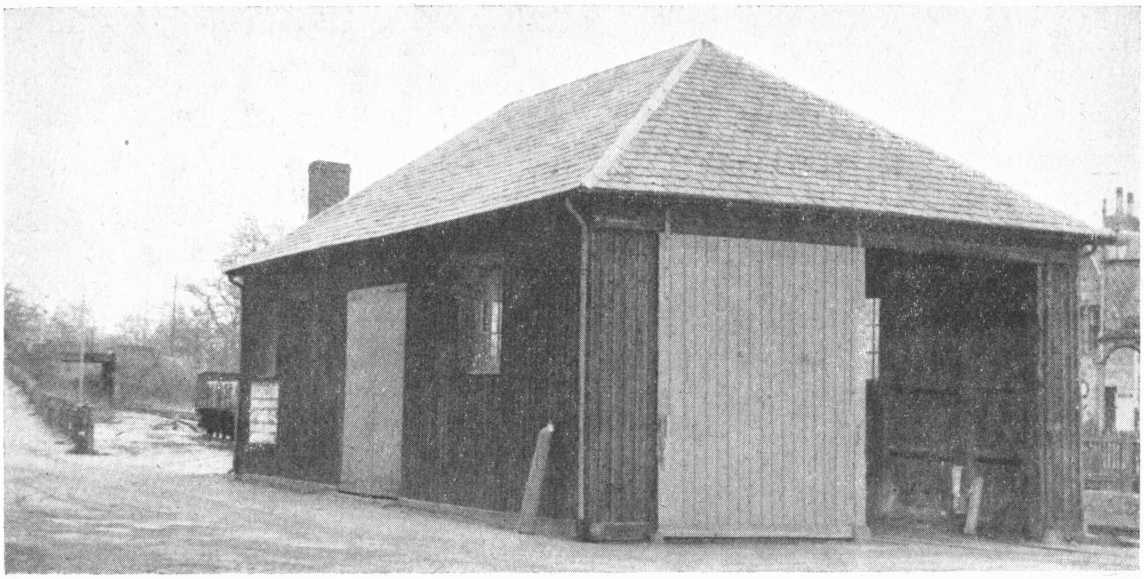
The goods shed is a typical Highland Railway timber structure, consisting of stout internal vertical framing at approximately 6 ft. centres, braced both horizontally and diagonally. The joints of the 6½ in. wide vertical boarding are covered by half-round, 1 in. wide, mouldings.

The half-scale plan shows a raised platform 3 ft. 7 in. above rail-level, so that road vehicles can be backed up to the open double-doors and their loads transferred direct into the waiting rail-trucks. A small hand-operated crane with a jib of 10 ft. radius is provided for this purpose. The small office has a brick built fireplace and chimney at one end. A 10 ft. 6 in. wide timber sliding door

Continued from page 171, THE MODEL RAILWAY NEWS, *August*, 1952.


WEST ELEVATION
NORTH ELEVATION
SOUTH ELEVATION
EAST ELEVATION
Scale of Feet
0
5
10
15
20
25
30
35
40

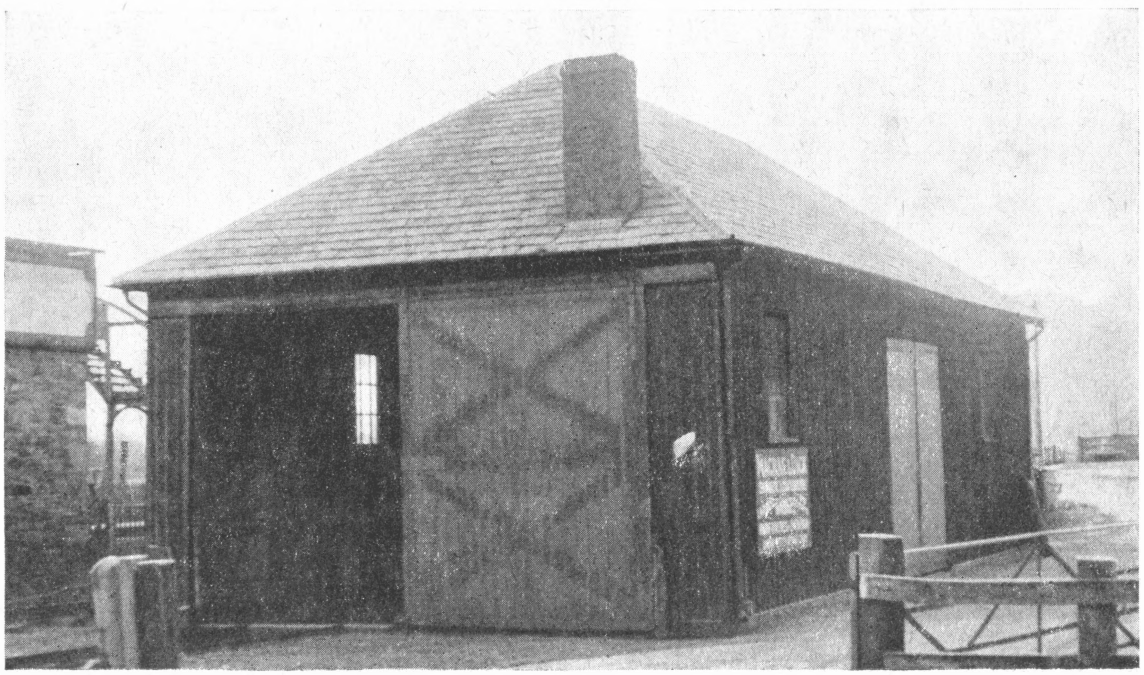
DETAILS OF GOODS SHED.
EAST ELEVATION
NORTH ELEVATION
SOUTH ELEVATION
WEST ELEVATION
Scale of Feet
0 5 10 15 20 25 30 35 40
5
PLAN OF GOODS SHED.
SCALE :- HALF SCALE OF ELEVATIONS



is provided at each end of the shed.

The track that passes through the goods-shed also gives access to the cattle-dock. This is in two portions, one separated from the other by a four-barred gate, 5 ft. 6 in. wide. The dock itself is 3 ft. 9 in. above rail level. It is constructed of 7 in. × 7 in. timber posts, 4 ft 10 in. high, and four 7 in. × 2 in. planks between the posts. The gates are made up of 7 in. × 2 in. vertical, 7 in. × 1 in. horizontal and 4 in. × 1 in. diagonal members. Perhaps one day someone will produce some plastic Highland cattle—with apologies to Landseer of course—and then this model will be complete !

(To be continued)



AUTO-COUPLING

FOR STUD CONTACT LAYOUTS

TWO SIMPLE SYSTEMS DESCRIBED BY W. E. MAY FOR THOSE WHO WISH TO MAKE THEIR OWN COUPLINGS

I HAVE in construction a small layout running on the stud contact system. The nature of my layout enforces a fair amount of shunting, and because of this, auto-coupling and uncoupling seemed highly desirable.

I therefore considered my basic requirements for auto-couplings generally and for a stud contact system in particular. These are :—

1. Efficiency.
2. Good appearance and/or unobtrusiveness.
3. Low cost.
4. Constructional simplicity.
5. To render buffer-locking impossible.
6. No centre ramps or other obstructions should be needed.

Eventually I evolved two methods of meeting these requirements and the results are, I consider, pretty satisfactory. The cost is extremely low and construction offers no great difficulties.

Both methods are adaptations for uncoupling, from " coupling only " methods which I have seen, and for which I claim no originality.

Making and Fitting the Auto-couplings

The materials required are 22-gauge brass or nickel silver wire, and a piece of thin tinplate, brass or phosphor bronze strip. For stock fitted with three link couplings, only the wire is required.

First, drill a hole with a No. 68 drill through one buffer shank (Fig. 1). This hole is large enough to allow the 22-gauge wire to pass quite freely through. Next, cut a small piece of tinplate to the shape and size shown in Fig. 2 and drill a hole with a No. 68 drill where shown. Solder this piece of tinplate centrally to the underside of the buffer beam. Pass a length of 22-gauge wire through the hole in the buffer and the tinplate. For coupling method " A," bend the wire as shown in Fig. 3.

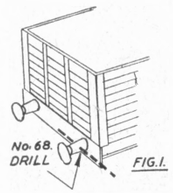


FIG. 1.

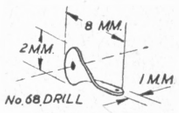


FIG. 2.

COUPLING METHOD "A"

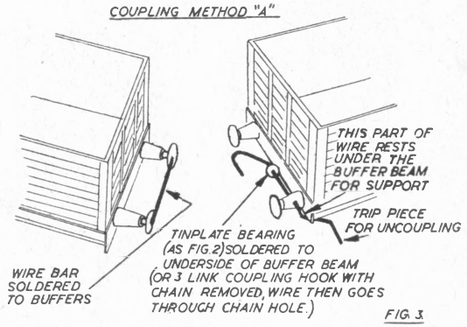
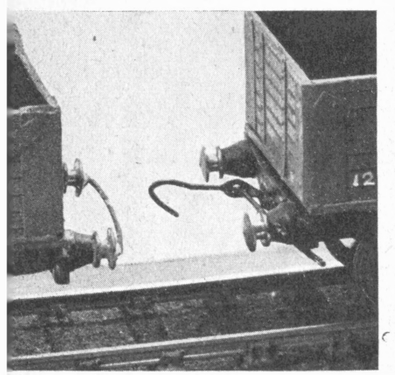
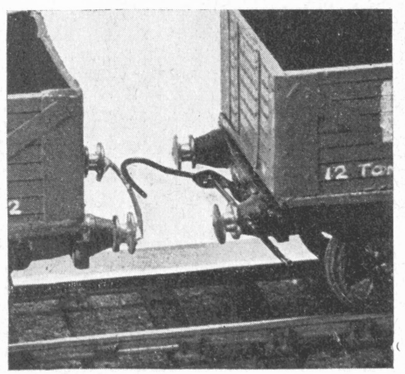
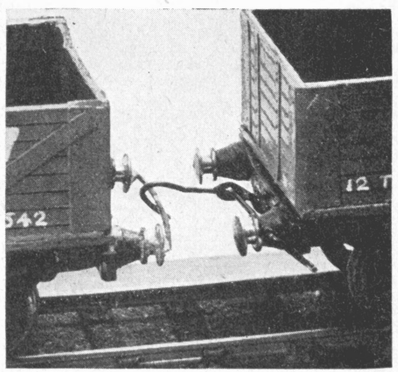


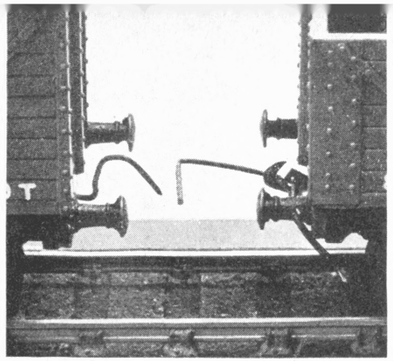
FIG. 3.

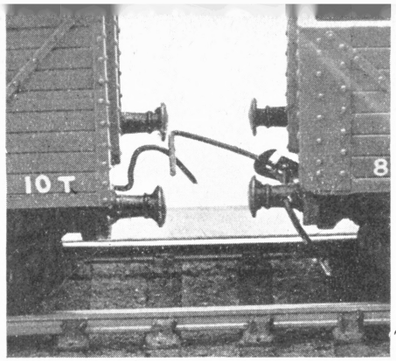
Below: Method " A " The three stages of coupling.

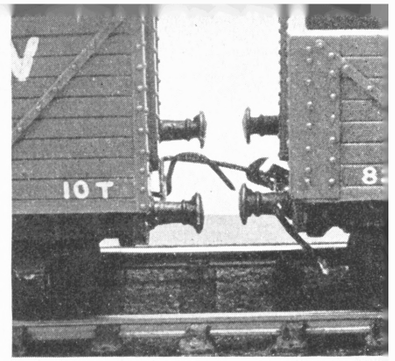












Above: Method " B." The three stages of coupling.

As an alternative to the tinplate bearing, the hook of a 3-link coupling with the chain removed may be used, the coupling wire going through the hole where the chain was.

COUPLING METHOD "B"

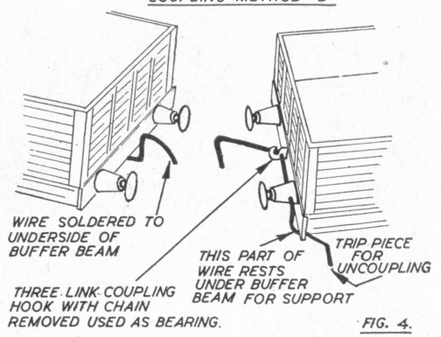


FIG. 4.

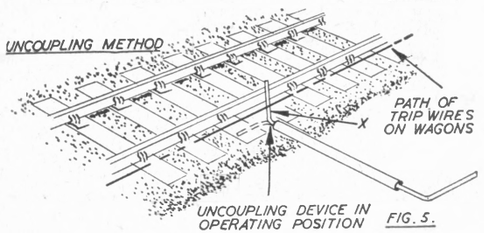


FIG. 5.

For coupling method " B," bend the wires as shown in Fig. 4. Both coupling methods work effectively and both uncouple equally well, and in exactly the same manner, but method " B " is perhaps less conspicuous, there being no bar across the buffers on one end of each wagon.

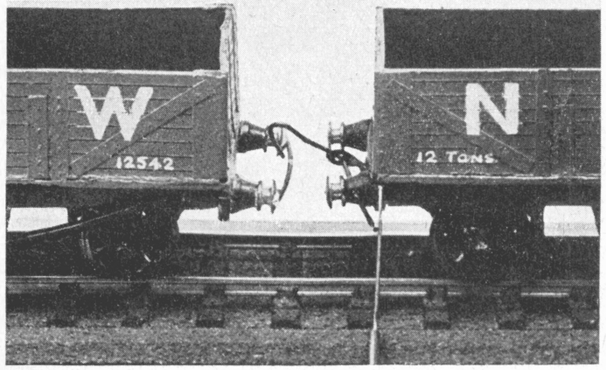
Uncoupling

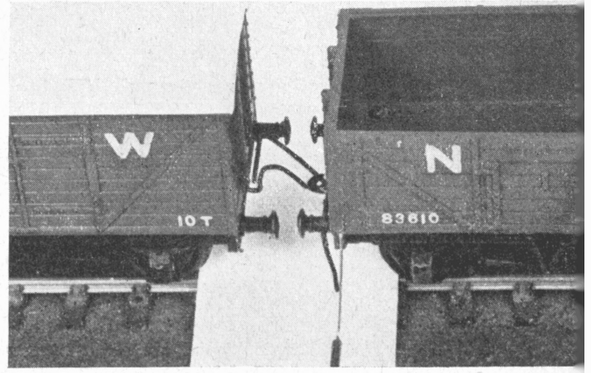
This only requires some means of knocking the trip piece to lift the wire coupling. My method is to use a piece of " Mercontrol " point rodding running in its copper tube, and bent as shown in Fig. 5. The uncoupling device is fixed at right-angles to the track. When the wire is flat, stock passes without uncoupling. When turned so that the part X is vertical, this engages the trip on the wagon, lifting the hook and so uncoupling the wagons.

To convert stock fitted with 3-link couplings, remove the hook and chain completely from one end and fit either a bar across the buffers or a hook on the buffer beam, as shown on the left-hand wagons in Figs. 3 and 4 respectively, according to whether method " A " or " B " is to be used. Remove the chain only from the other end. The hook left then provides a ready made bearing for the wire, as shown on the right hand wagon in Fig. 4.

It must be pointed out that these couplings are uni-directional (that is, wagons must always face the same way), but as I have no return loops or triangles, this is no disadvantage on my layout.

Below: Uncoupling. Left, method " A." Right, method " B."





This is "O" Gauge

by M.H. Cox

I ENDED last time by saying that the ex-Government motor with which we intend to drive our little engine had to have certain modifications made to it. You will remember too, that in the first article of this series, I said that field wound motors of this type could not be reversed merely by reversing the direction of the current flow, as is the case with a permanent magnet motor. Now, the reason for this is simple. As you all know from

MAKING AN "O" GAUGE EX-N.E.R. 0-8-0 GOODS LOCO.

THIS MONTH: INSTALLING THE MOTOR AND RECTIFIER

the elementary science you did at school, even if you've done none since, *like* magnetic poles repel one another, and *unlike* attract. The poles of an armature are magnetic poles and they are either attracted to, or repelled from the stationary poles, of field poles, of the motor, and so the motor revolves. The sequence of attraction or repulsion is determined by the commutator and brush gear. With a permanent magnet motor, running in one direction, at a given time one pole is being attracted to, we'll say, the uppermost pole of the magnet, which we'll call the N. pole. Therefore, the polarity of the armature pole must be S. Now, if we reverse the direction of current flow in the armature winding the armature pole will now become N. Instead of being attracted, it is now repelled from the N. pole of the magnet, so the armature rotates in the opposite direction. It is because of this characteristic that the permanent magnet motor has become almost universal for driving model locos. In point of fact it is not ideal for the job as it is the cause of all the problems relating to magnetic locking. A lot has been written, by many different people, on this subject of magnetic locking, but I think they have all overlooked the basic cause, and that is that the motor is of the permanent magnet variety.

Continued from page 151, THE MODEL RAILWAY NEWS, *July*, 1952.

To revert to the subject in hand, when we come to consider a motor with a wound field magnet in place of a permanent magnet we find a very different kettle of fish. True, when we reverse the direction of current flow in the motor, we reverse the armature current, and therefore the polarity of any limb of that armature at a given time, as before. But, we also reverse the current flow through the field magnet, and so also, its polarity. Therefore, when we reverse the flow, we find that the armature pole is now N. as before, but the magnet coil has also changed, and has now become S., so they still attract one another, and the motor continues to run the same way. Obviously, therefore, if we are to reverse the rotation of the motor, we've got to find some way of making the field polarity remain in the same direction while the armature polarity changes. There are three practical ways of doing this:—

(1) Hand operated reversing switch.
(2) Polarised magnetic reverser.
(3) Rectifier (full wave or bridge type).

The first means is employed on commercial a.c. operated toy locomotives and is undesirable from our point of view. I notice, looking at my rough notes for this part, that I said no more on this method; on further thought, though, the method is worthy of some consideration, rather than condemning it out of hand, but only as an auxiliary and supplementary control to another method. An over-riding control of some kind does assist when double-heading is being employed. It is sometimes useful to be able to make an engine disobey the controller.

The second means, employing a polarised reverser, is perfectly practical, but the construction of such a gadget is a bit beyond the scope of the average model maker. The more so as if the thing is to be sufficiently sensitive to work before the motor starts to turn, i.e., on the first stud of your controller, it will almost certainly burn out when you "give her the works." To overcome this you must also have an overload circuit breaker to isolate the reverser windings, once it has done its job. By this time, you will need quite a train to house all the bits and pieces.

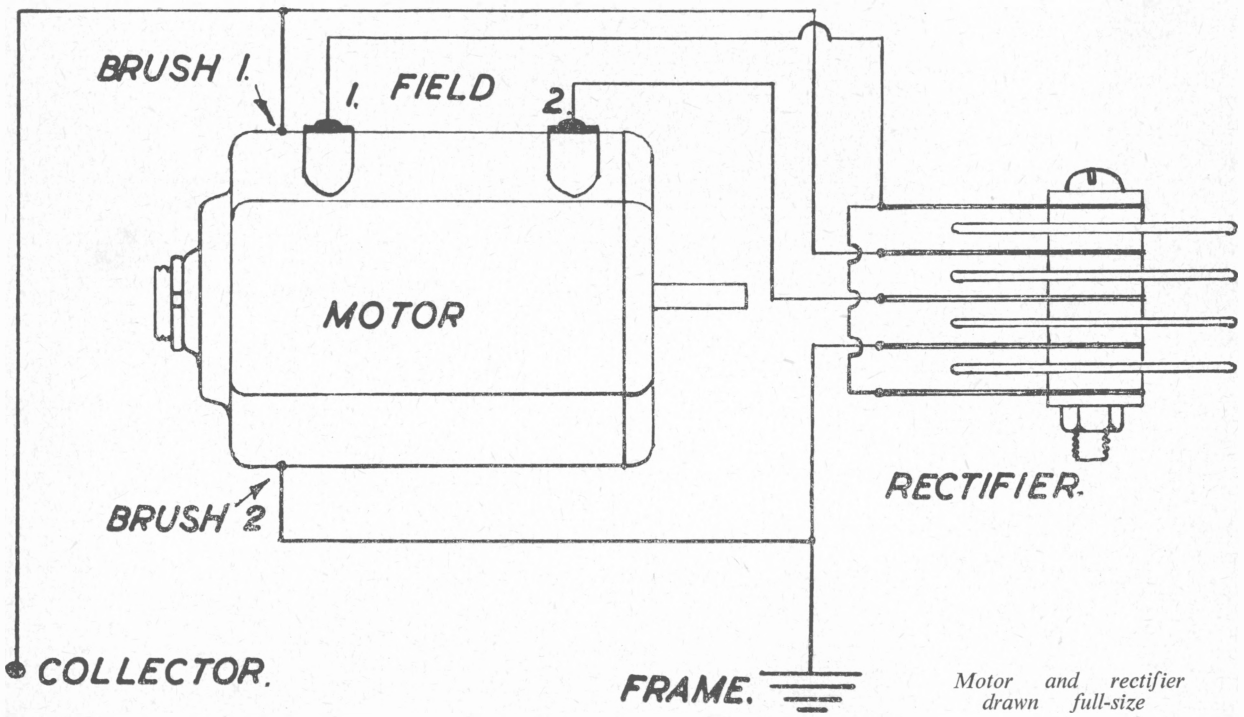
I suppose I ought to mention another method that, really, is hardly to be taken seriously, and that is the sequence reverser. I remember seeing an engine dashing madly backwards and forwards

across a pair of points because there was a break in the electrical pick up as it went over ! Enough said.

And now to the rectifier method. I gave the rough version of this article to my father to read. He makes good models, but knows as much of electricity as the table I am writing on. He read right through it all and then said: " Yes, but what is a rectifier ? " Well, I imagine most of you know, but in case you don't, it is a gadget that, whichever way you push electricity into it, it always comes out the same way round, at the other end. If you want to know why, go to the local library and borrow a good book—on electricity, I mean.

The use of a small full-wave rectifier overcomes all the snags of the other methods, furthermore, these little rectifiers are obtainable from any of the Government surplus stores at a most reasonable figure. Should you have any trouble in finding either motors or rectifiers, if you drop me a line c/o the Editor, I will advise you where they can be obtained. But please send a stamp of some sort for me to reply. The rectifier you choose should have a capacity sufficient for the load it has to carry. The field consumption of the motors I use is about 1/10 amp under normal running conditions, and the voltage, nominally is 12 V. Most Government specifications are pretty conservative, so a rectifier rated as above will be safe enough against any overload you may give it. The rectifiers I have always used on these jobs are rated at 12 V, ½ amp, and you can see from the photograph in the July issue, just what they look like. Another type of the same rating is also common in the dealers, is smaller in diameter, but rather longer; it is equally satisfactory. The drawing accompanying this issue also shows the motor and rectifier approximately full size. The motors, incidentally, are known as " Type No. CM3 "; the rectifiers are without marking.

And now for the function of the circuit. As I said earlier, by passing current via its alternative routes, the rectifier always manages to produce uni-directional current at its output terminals. regardless of how you change the direction on the input end. You will see when you examine the animal, that it has five connecting lugs, one in the centre, and two on each side of the centre one. The centre one is the positive output terminal; those on each side of it are the input terminals; the two outer ones are together, the negative output. If these two outer ones are not already connected together they should be connected now.



Motor and rectifier drawn full-size

I am afraid all this has been an awful lot of talk and very little do, but I do think it necessary that one should know not only what to do, but also, why one does it. Besides, if any of you are interested enough to be building a locomotive either wholly, or partly, to these directions, I am sure you will want to know why. I am still enough of a small boy to want to know why and how about almost everything I meet, and it is surprising how often the knowledge comes in useful. Admittedly, my job is designing odd small bits of machinery and

mechanical gadgets, and any odd new principles I come across have a habit of appearing in the oddest guises a month or two later ; but that's quite another story.

Now for a bit of doing for a change. Have a good look at the motor you're using. (I'm assuming it is one of the pattern shown in the photographs on page 148, July issue.) I call them " little grey motors," and whether you have selected a 12 V or 24 V one doesn't matter the proverbial tinker's cuss—they're both the same in construction. Incidentally, I would recommend the 12 V ones even if you use 24 volts; as I said. Government ratings are conservative, and to get the full power from these things they need over the rated voltage, 16 volts is ideal for the 12 V job. You will see that on the drive shaft end is a cap held by two slotted nuts, and at the far end, on the sides, are insulated, semi-round-head screws. Withdraw these and pull out the brushes with their springs. Remove the taper pin from the drive shaft, undo the slotted nuts, and withdraw the end cap of the motor. Pull out the armature, but be careful about the balls in the adjustable race at the commutator end, and those in the cap on the drive end. Remove the adjustable race by slackening the locking ring and then unscrewing the bearing shell. Keep the motor with the open end uppermost while you do this, and the balls should remain in place. Lay the bearing carefully on one side until you're ready to reassemble the motor. If the balls do fall out, fill the cup with a little Vaseline and press the balls into place in the Vaseline. Now take out the two stiff springs that hold the field magnet in place, disconnect the wires connected to the brush holders, and remove these wires completely. Leave the connections from the field windings to the motor terminals untouched.

Now reassemble the motor, adjusting the bearings so that the armature spins quite freely, without the brushes, but has no end play, and does not rattle when it spins. When satisfied about this, put in one brush, minus its screw cap, being sure that the curvature of its business end matches the commutator curvature. Press it in till it is home, and then cut the spring off flush with the tip of the insulating bush, then screw the cap home. Now do the same with the other brush, and the motor conversion is done. Incidentally, the brush springs are shortened to reduce the brush pressure, and so the internal friction of the motor. We want the motor to run at virtually zero revs, so friction must be reduced to a minimum. In its original form, all that was required was that it would run at a constant speed, and start with certainty.

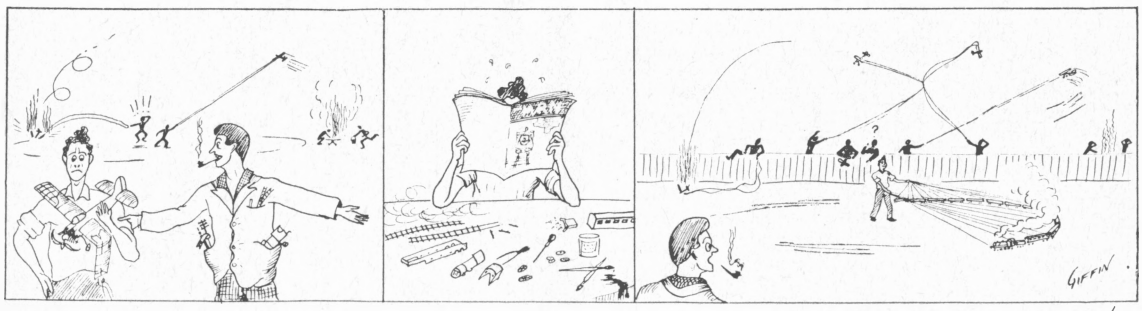
All that remains now is to fit the motor to the tender sub frame unit. Place the motor on top of the sub frame, but upside down, bit Irish I know, and wangle the two till the relative positions are correct, then mark through the holes in the sub frame for the motor screws, on to the motor casing, on to the face that used to be the side of it. Drill and tap 8 B.A., but be very careful to see that the drill only just penetrates the case wall. Now screw the motor into place.

The rectifier must now be fitted; remove the nut from one end of the central tie bar. All the bits and pieces will now come loose. Don't worry, but don't let any fall off, or you'll be in trouble in a big way. Screw the end of the tie bar into the 2-B.A. hole provided for it in the forward layshaft bearing member. Now tighten down the nut on top of the rectifier until the thing holds together again. Connect the two output terminals to the two original terminals on the motor. Connect the two input terminals to the caps of the two brushes, use thin wire, and only tack the leads to the brush caps; then, when you want to remove a brush, break the soldered connection. If you used thick wire and soldered it properly, you would never get the brush out. Connect one brush, or rather, one input terminal of the rectifier to the sub-frame, i.e., earth, or frame in the drawing and the other input terminal to the stud collector, third rail shoe, or other input supply.

Now connect up to your supply line and try the thing out. It should reverse exactly as does a permanent magnet motor. If, on test, the motor seems noisy, it is probable that the bearings are not properly adjusted; but do not expect it to be dead silent, these ball races do make some noise. If you are really fussy, the bearings can be changed, but I will deal with this some other time.

(To be continued)

CONTROL-LINE-FLYING-SCOTSMAN



WITH APOLOGIES TO ALL AEROMODELLERS!

BRITISH RAILWAY MODELLING STANDARDS BUREAU
STUD-CONTACT SYSTEM OF ELECTRIFICATION
Recommended Standard Dimensions

KEY TO LETTERS IN DIAGRAMS AND EXPLANATION OF DIMENSIONS

FIG. 1 (SKATE)

A. Horizontal length.
B. Length of end ramps.
C. Rise of end ramps.
D. Width.

FIG. 2 (STUDS AT TURNOUTS)

L. Maximum lateral divergence of stud centre from centre-line of straight track which will ensure skate remaining properly supported.
M. Ditto towards outside of curved track of specified radius.
N. Ditto towards inside of curved track of specified radius.
P. Minimum distance between centre-line of straight track and any stud required to clear skate of vehicle running on that track.
Q. Ditto for curved track of specified radius.
R. Minimum radius of curve to which above are applicable.
X. Minimum distance from running edge of rail (gauge line to any stud in four-foot way.
Y. Ditto to any stud outside the track.

STANDARD DIMENSIONS (All in inches)

SKATE ON VEHICLE (FIG. 1)

Gauge	A	B	C	D
"OO" & EM	2	5/16	5/64	5/16
"O" & "O" fine	3¼	⅜	3/32	½
"1"	5	⅜	3/32	½

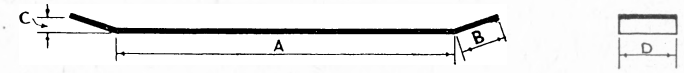


FIG. 1.

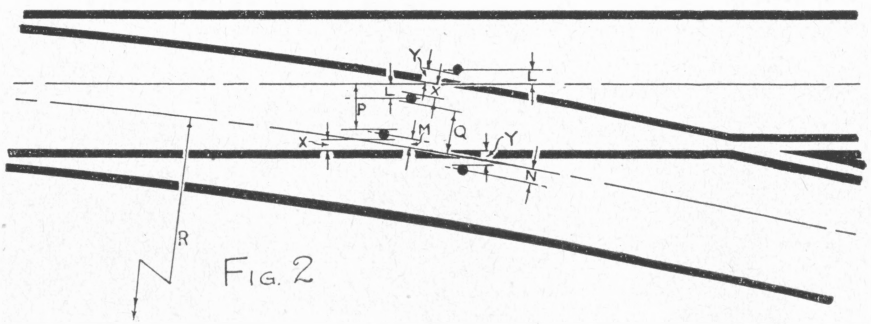


FIG. 2

STUDS IN TRACK (GENERAL)

ALL dimensions are *maximum*

Gauge	Spacing	Height above rails	Difference in height between adjacent studs
"OO" & EM ..	1¾	1/16	3/64
"O" & "O" fine ..	3	1/16	1/16
"1"	4½	1/16	1/16

POSITIONING OF STUDS AT TURNOUTS, ETC.

(FIG. 2)

Gauge	L.	M.	N.	P.	Q.	R.	X	Y.
"OO" ..	5/64	3/64	3/64	7/32	*	18	5/64	7/64
EM ..	5/64	3/64	3/64	7/32	½	24	1/16	7/64
"O" ..	⅛	1/16	5/64	⅜	⅜	36	†9/64	†3/16
"O" fine ..	⅛	1/16	⅛	11/32	⅜	36	⅛	5/32
"1" ..	3/16	1/16	⅛	5/16	⅜	54	7/64	3/16

*Clearance is not attainable in "OO"-gauge to meet specified conditions.

†All figures are for wheels in accordance with B.R.M.S.B. "Standard Dimensions 1950" book. Where older and coarser "O" gauge wheels are in use dimensions *X* and *Y* must be increased to 3/16 and 7/32 respectively.

Additional Notes on the Dimensions

The foregoing dimensions are recommended to secure maximum interchangeability and trouble free running under the most diverse conditions. They have been determined to cover cases of the skate being mounted on vehicles having a fixed wheelbase between 7 and 19 ft., the skate being placed symmetrically with respect to the wheelbase. In fixing divergences (letters *L*, *M*, *N*, Fig. 2) and clearances (letters *P* and *Q*) regard has been paid to the possible positions taken up by a skate under both these conditions, allowing for sideplay between wheels and track, but not axleboxes. It thus follows that the track must be laid to correct gauge for the recommendations to be effective.

Clearances *X* and *Y* governing studs placed close to running-rails ensure that passing wheels will not touch, and therefore short-circuit, such studs and here again the correct gauge is assumed.

A word or two on the clearance dimensions *P* and *Q* may not be amiss. It will be apparent that when two tracks converge or diverge the skate on a vehicle must either ride over a stud properly or miss it altogether. Thus, any stud not within the appropriate "divergence" figure (*L*, *M* or *N*) from the track centre-line must be at least the minimum "clearance" distance (*P* or *Q*) from it. In between there is a "danger zone" where a stud may foul a skate and cause derailment. Where for some reason it is imperative to place a stud within this zone, another one of identical height must be placed opposite to it and within the divergence distance of the track centre-line. This is normally the case with an ordinary turnout, the studs in the two divergence lines occurring in pairs. In "OO"

gauge it is impossible to get adequate clearance *Q* on curves, as obviously the clearance *X* must be maintained and the minimum value of this brings the stud into the aforementioned danger zone.—G. H. PLATT.

Stud Contact Subtleties

The growing interest in the stud system of electrification, particularly in "O" and "1" gauges, has led the B.R.M.S.B. to devote several of its meetings to making a full investigation of the various aspects concerned. A full set of recommended dimensions has been worked out and is now published by the B.R.M.S.B., but in view of the fact that these figures can be rendered unworkable, in whole or in part in the event of certain conditions, it was felt that some accompanying notes were required for the guidance of modellers adopting stud contact for the first time.

Collectors

A skate which does not remain parallel with the running surface of the rails in every position, high or low, *may* be made to work on a particular track, but not on others; it will always produce a clatter as each stud is encountered during forward or backward motion. A certain amount of working "slop" is to be expected and has been allowed for in the dimensions laid down but it should be kept to a minimum.

With a "centre pole" type of collector the vertical rod should be placed as near to the centre of the skate as may be convenient in order to equalise the "slop" and also to reduce to a minimum the leverage resulting from rising studs at crossings which brings about a tendency for the pole to jam in its bearings. The pole itself should always be as rigid as possible, being of steel of generous diameter.

With the "parallel ruler" type of collector it is advisable to arrange for the links to be attached as near to each end of the skate as possible and for them to be of adequate length. In the case of a large-wheeled express locomotive, the upper pivotal points of the links may be level with the axle centres; but with anything less than medium sized drivers they should be pivoted above the axle centre line. The angle of the links should never exceed 45 degrees with the running surface of the rails when the skate is at its lowest position (i.e., when touching a stud); as the skate rises the angle becomes progressively less, but if the links are made long enough to comply with the conditions and are pivoted in the manner mentioned above, there will be no danger of the links rising to an unworkable angle.

The end angle or "turn-up" of the skate is of great importance; too many skates are just curled up in a perfunctory way and only manage to work with the barest safety margin. Experimental skates with turnups of 1-in-3 and 1-in-4 angles were tried, the recommended angle of 1-in-4 proving greatly superior to the steeper angle.

Note that *for universal working* the length and width of the skate cannot be increased or decreased at will; this will come as something of a shock to many modellers who may have adopted rule-of-thumb methods and are under the impression that "anything within limits will do."

Studs

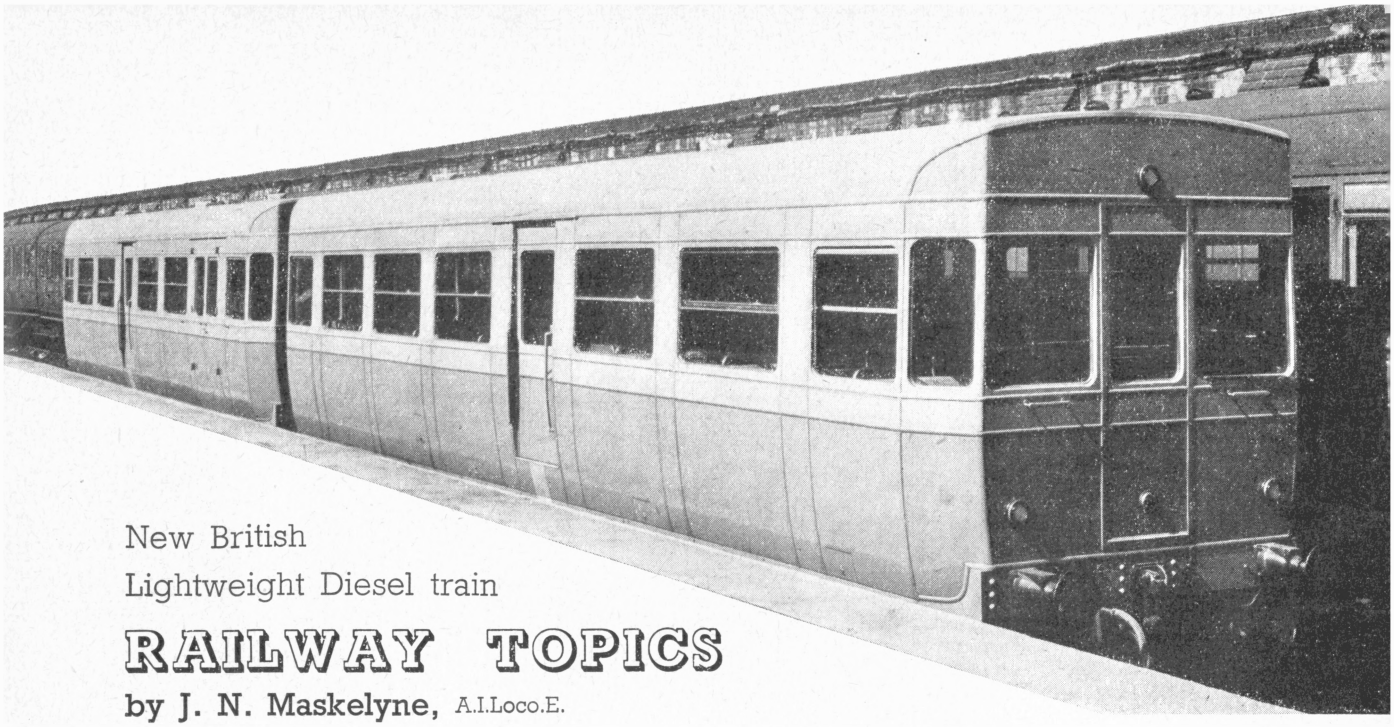
Some modellers may prefer, for various reasons, to place their studs closer together than the maximum permitted spacing; no harm will be done as a result. While any difference in height between adjacent studs must not exceed the maximum amount permitted, if this can be reduced, quieter running will be obtained in many cases. For example, supposing six increases were sufficient to raise the skate from "normal" height to that required to pass over a crossing; if eight or nine lesser "stops" were used to accomplish this the workings of the skate are rendered less onerous. A very good way of checking the rate of rise at crossings is to calculate where the studs should begin to rise; next, to instal the highest stud and then to place one end of a straightedge on this stud, the other end of the straightedge being rested on the last "normal" stud, and then adjusting the intermediate "risers" to a steady slope.

For lasting satisfaction, all studs should possess some feature to prevent them from sinking through the baseboard or becoming "depressed" in their proper relation to the surface of the running rails. While there is nothing to prevent any modeller adopting the "all-level" system of studs, where all studs are at the same height, namely at crossing height, the full benefit of the *appearance* of the stud contact system is to some extent nullified thereby and it should be borne in mind that the "all level" system does not mean simplified collectors unless the owner of such a layout is content for his locomotives to be unable to run on the normal stud contact system where the studs on plain track are just above sleeper level, only rising at points and crossings.—M. LONGRIDGE.

GREAT WESTERN COACH DRAWINGS (*Continued from page* 185)

a body 8 ft. 6¾ in. wide), 2 ft. from the vertical centre line. Experience with drawings has shown that minor adjustment of these centres is occasionally necessary, and the same is true of the small radius of the upper deck. The latter appears to have been 1 ft. 8 in., with centres 6 ft. 10½ in. above the base, and 12 in. side of the vertical centre line.

These notes may break off with a few remarks on the word "clerestory." The Pocket Oxford Dictionary defines this as "windowed part of wall of cathedral, etc., above aisle roof," meaning that the central roof over the nave of such a building is raised a whole storey above, and clear of, the roof over the side aisles. The derivation is given as "clear, storey," and this in conjunction with the pronunciation indicated seems to answer a point which has sometimes been in doubt, though written "clerestory" it is pronounced "clear-story."



New British
Lightweight Diesel train

RAILWAY TOPICS

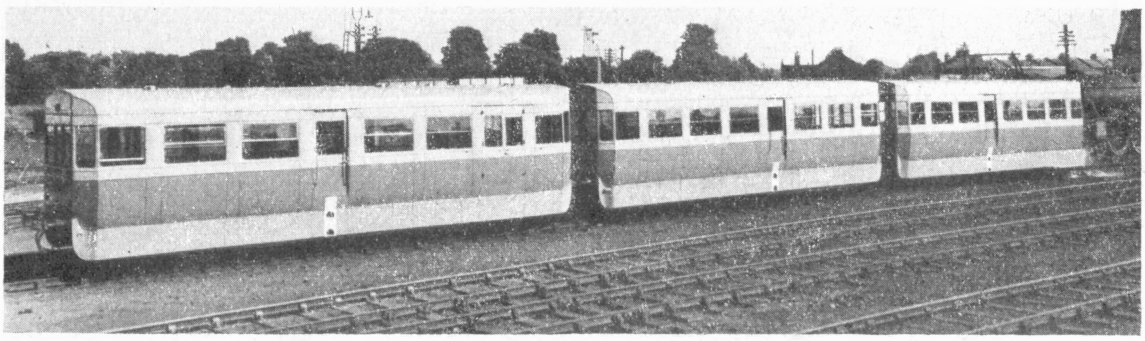
by J. N. Maskelyne, A.I.Loco.E.

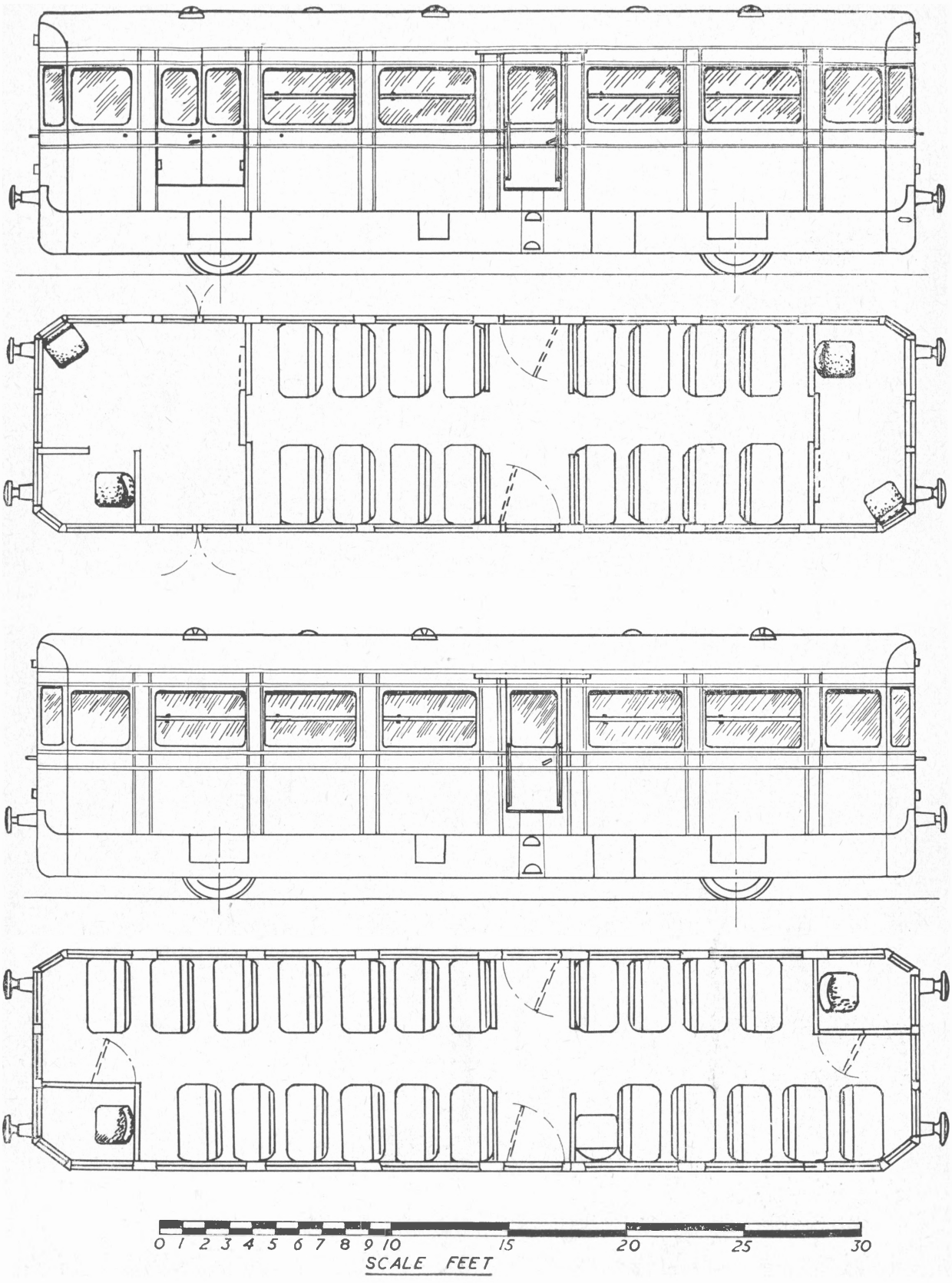
BY arrangement between British Railways and A.C.V. Sales Ltd., trials have been carried out between London (Marylebone) and Princes Risborough of an experimental British-built lightweight diesel train recently built by A.C.V. Sales Ltd. The facilities afforded by British Railways for these trials form part of a special study which the Railway Executive is making of the possibilities of light units generally for developing traffic, and for working it more economically, both on branch line and on suitable main line services. As part of the same policy, an improved type of steam "push-and-pull" train is being tried out in the Western Region, on the Ealing and Greenford service.

Following the service trials of the A.C.V. demonstration train, it has been put on public services on outer London suburban routes during "off-peak" periods. I was privileged to attend one of the trials and found it interesting, if not remarkably impressive !

The basic principle of the experimental train is the application to a railway vehicle of selected features of bus and coach design (including mass-produced power units already in use in London's buses and all over the world), added to the great advantage which a railway vehicle possesses in its much lower rolling resistance, and the easier gradients which it uses. The designers have aimed, in fact, at a unit which combines the best features of both rail and road vehicles, and which, apart from its possible use in the British Isles, will, it is hoped, prove capable of development in the export field. Compared with a normal railway coach 60 ft. long and weighing 30 tons, one of the motor cars of the lightweight train, plus one trailer, has a combined length of 80 feet, and including all power units, the weight is only 25 tons. In other words, the new-type cars with 20 per cent. more space weigh 15 per cent. less, quite apart from locomotive weight. In slack periods the motor car can shed its trailer and so reduce the weight to 15 tons while retaining a capacity equal to the traffic available.

Other advantages claimed by the manufacturers for this type of lightweight train include:—Quick turn-round at stations—can be driven from either end; low wear-and-tear and maintenance costs, due to lightweight construction; no fuel burned while train is not actually in operation; fuel consumption under variable service conditions is about

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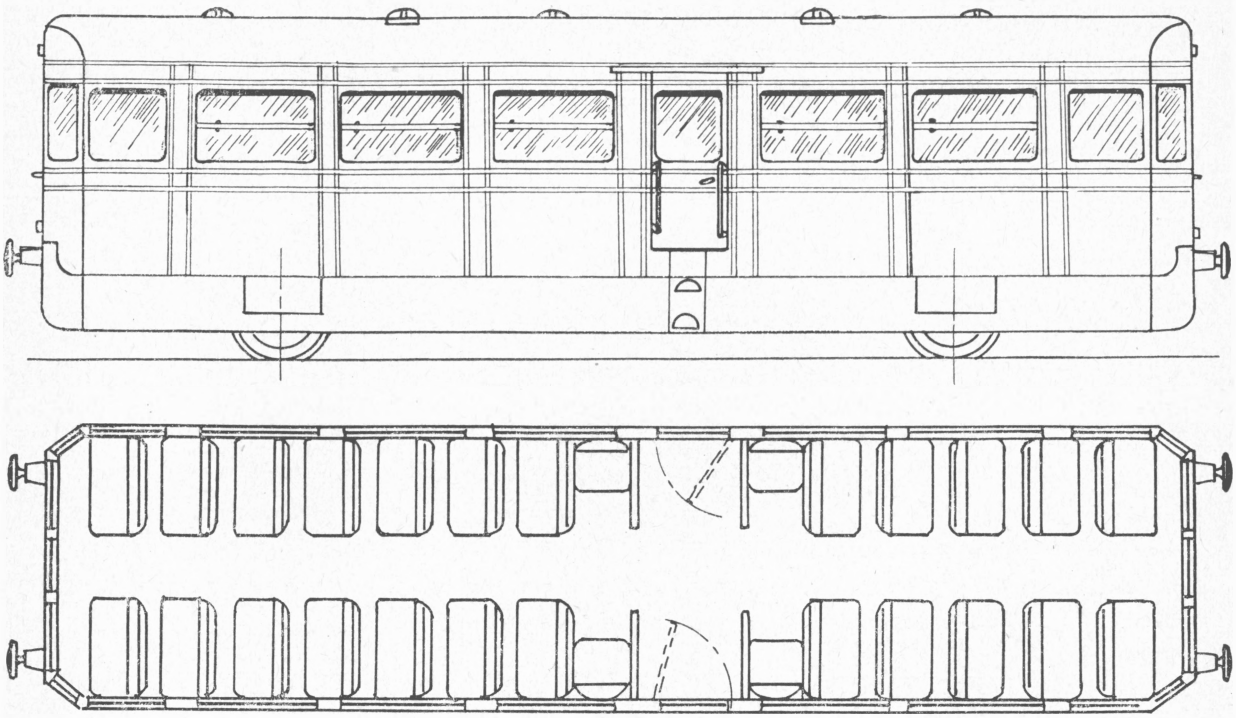
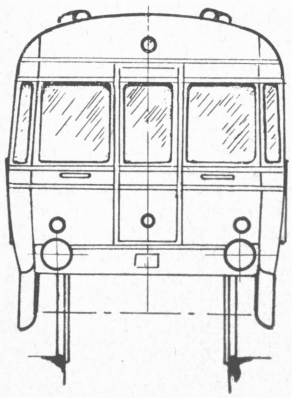
SCALE FEET





Above:
Trailer car.

Left:
End elevation of motor-car.

11 miles to the gallon for each power car, or 5½ miles per gallon for the three-car train, and economy in man-power; train is operated by driver and guard only.

Description of the Train

The train as demonstrated comprised a three-car set, but to meet fluctuations in traffic it can be operated as one-car, two-cars or three-cars as required. Each car is of composite lightweight construction and is carried on four wheels; the complete train has seating accommodation for 129 passengers is 120 ft. 9 in. long over buffers, and weighs 39 tons 14 cwt. It has a driving cab and controls at each end and all three cars have central passenger doors on each side.

While the body shell is standard for all three cars, interior arrangements can be varied as shown, to suit individual requirements; as all power units are below floor level, the whole of the space above this level (except for the driver's cabs) is available for passengers and luggage.

Bus Engines

The steel underframes and engine units were made in the A.E.C. Works, Southall, Middx, and the bodywork at the Park Royal Vehicles Ltd., another A.C.V. Company. Each motor car is powered by a six-cylinder diesel engine, and this as well as other mechanical details, is identical with those used in the latest Green Line omnibuses, having a brake-horse-power of 125 at a maximum of 1,800 revolutions per minute. Power is transmitted to the wheels through a fluid flywheel and a four-speed epicyclic gearbox. The driver's controls include a " dead man's handle " which stops the train in emergency. The controls are coupled through the train so that both motor cars can be driven simultaneously by one driver, as on an electric train. Although not so fitted at present, the trailer also can be fitted with driving controls, so as to avoid running round when a motor car and trailer are used together.

The maximum speed is about 45 m.p.h., and preliminary trials have shown that the train has no difficulty in maintaining normal schedules on the class of work for which it has been designed. The train is electrically-lit and is fitted with the automatic vacuum brake, as on an orthodox steam passenger train.

Talking Shop

THE range of Master Models produced by B. J. WARD LTD., has once again been extended and the new items are just as authentic and useful to the model railway enthusiast as those reviewed in the May MODEL RAILWAY NEWS. A sleeper-built, earth-filled buffer stop is just what is needed for the odd siding. The model is supplied in rather brighter colours than one sees the prototypes, but any model man who desires the true but sombre effect can apply appropriate paint. Next, there is a working party. This consists of five "British workmen" including one with a flag, red, and one pushing a wheelbarrow. These form a useful gang who can be given various jobs to do according to the owner's imagination—track maintenance will probably be the most popular application.

November is not far off so you must have a fogman's hut, fogman and brazier. The brazier is supplied with a coke fire, ready lit (what service !).

Other components are mainly for the station—a scale with small goods (just right to place outside the parcels office)—glass crates can go in the same place or perhaps in a shock-absorbing wagon if you have one. There has been a development in connection with the W. H. Smith bookstall. The same casting is now available in appropriate colours and lettering for a Finlays (tobacconists) or a Waltons' (fruiterers) stall. There are also some small placards for which numerous sites can be found.

Miniature Railway Posters

A sheet of 12 scale reproductions of actual posters are available from POSTERSTAMPS LTD., or at the usual model shops. They are well printed in four-colour half-tone and the size of each poster is 26 mm. × 21 mm. I hope further sets will be issued in due course for these posters will take a layout one more step towards complete authenticity. If you send direct to Posterstamps Ltd. (see p. iv, "M.R.N." July) don't forget to include a 1½d. stamped addressed envelope.

Catalogue Received

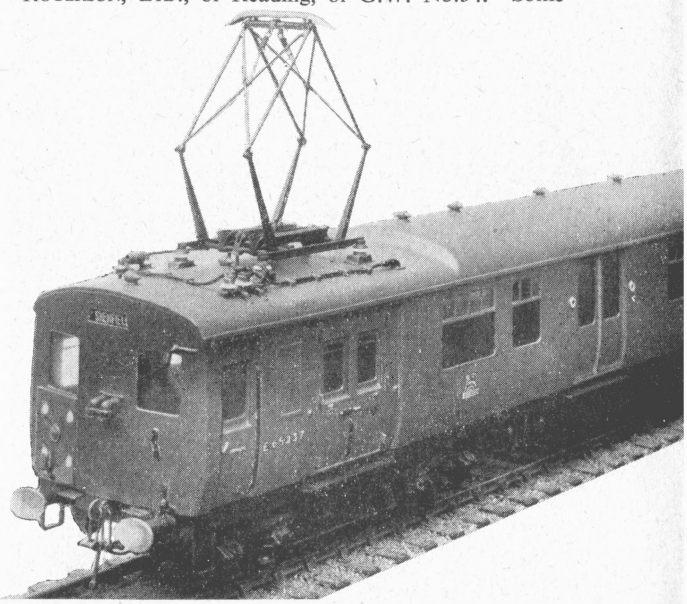
ATTENBOROUGH MODEL RAILWAY. Nottingham and Leicester. A.M.R. Chronicle. 44 foolscap (13 in. × 8 in.) duplicated pages; over 100 line sketches.

This is an improved and enlarged copy of the 1951 Christmas Season A.M.R. Chronicle. In the new edition the number of pages and illustrations has been considerably increased and a section is devoted to "A.M.R. Library News." A very comprehensive list of all model railway items and books is given.

Models to Special Order

Here is a small selection of photographs showing some excellent examples of "one off" special order jobs by the trade. The picture on this page and No. 1 opposite comes from CHERRY'S (SURREY) LTD., of Richmond. This is a 7 mm. scale Eastern Region electric motor coach of the type running on the Liverpool Street (London) to Shenfield section of the old Great Eastern Railway. The model was built to the order of a customer in Cheshire who has a complete outdoor railway with overhead catenary electrification. The model has a unique interior fitment—a triangular section of mica placed throughout the length of the coach so that the sides incline from the floor edges to the centre of the roof. The refraction of light by this device gives a convincing suggestion of "fullness" to the interior when one looks through the windows. The photograph is by Charles E. Fraser.

Photograph 2 is of a 4 mm. scale model by JAMES ROGERSON, LTD., of Reading, of G.W. No.34. Some

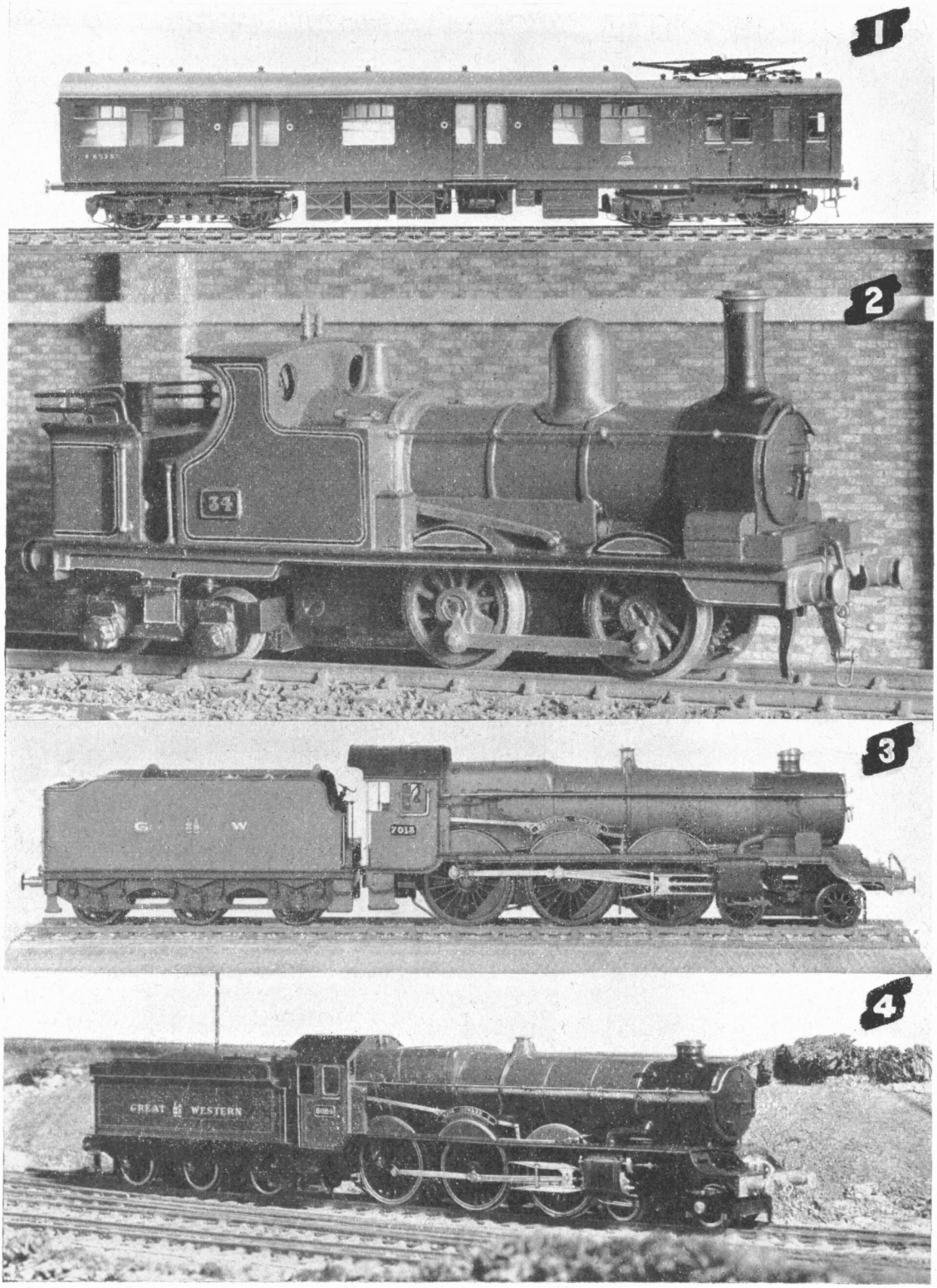


eagle-eyed reader may notice that the springs on the trailing bogie are missing. They had to be left out to enable the engine to traverse the curves on the customer's layout. The photograph is by M. W. Earley.

No 3 shows a 7 mm. scale version of *Bristol Castle*, built by CARMAN & SCADDING, of London, N.8. This model is of interest because the prototype was used to pull the Royal funeral train and named *Windsor Castle* for the occasion. The G.W. and Crest on the tender was the last form of insignia used by this railway. Actually, *Bristol Castle* was built after nationalisation so the model is incorrect in this respect. Probably the reason behind this is that the customer's own little bit of Great Western has not yet been nationalised.

The last photograph, No. 4, is another Great Western model— a "King" for 16.5 mm. gauge, two-rail by R. M. EVANS & Co., of London, S.W.1. The rivet detail and paintwork is superbly executed. The photograph is by Larkin Bros. Ltd.

Guy J. Chesmore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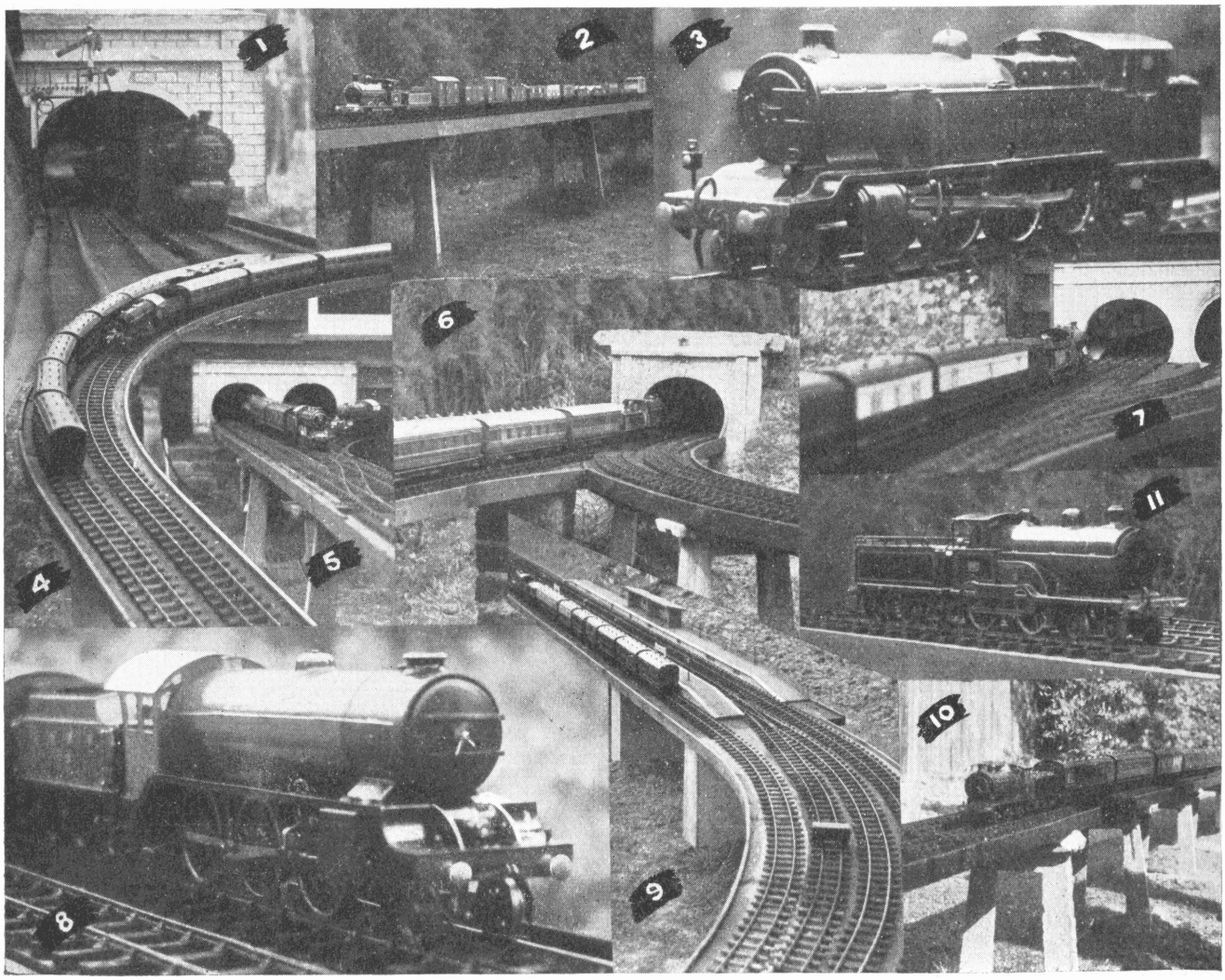
GREAT WESTERN

THE GAUGE ONE ASSOCIATION HAS A DAY OUT

ON Saturday, July 12th, the Gauge One Model Railway Association held another of its "get-together" meetings when many members took their locomotives and rolling stock to Dr. Greenway's layout at Bognor. The main double track circuit of this layout is some 200 ft. long and the photographs below show some of the interesting steam and controlled-clockwork locomotives which ran on this excellent racing ground.

In Photo. 1, Lord Northesk's coal-fired N.E.R. 0-6-0, a very game loco. emerges from the tunnel leading from the shed in which the main station is housed. Photo 2 shows a goods train on the branch line, headed by controlled-clockwork L.N.W.R. 0-6-0 No. 930, a pre-war Bassett-Lowke product owned by Mr. F. R. Kaye. Another controlled-clockwork locomotive appears in Photo 3—a Marklin 4-6-4T No. 329 Stephenson, owned by Mr. Fordham. In Photo 4, Lord Northesk's Bassett-Lowke 2-6-0 on a local passenger train passes Mr. K. R. Herring's 2-6-0 hauling a main line express. Mr. F. Wrighton's fine high-pressure coal-fired G.E.R. 4-6-0 is shown passing through the main station in Photo 5. Photo 6—a controlled-clockwork G.N.R. "Atlantic" owned by Van Riemsdyk approaches the second tunnel on the layout with a short passenger train. Photo 7—Dr. Greenway's Brighton "Atlantic," running fast with a passenger and parcels train, approaches the platforms of the main station. In Photo 8 is Mr. K. R. Herring's L.N.E.R. "Mogul." This has been rebuilt by Mr. Wrighton with a new boiler, cylinders and valve gear and is soon to be fitted with an axle-driven feed pump. It performed very well hauling heavy trains throughout the day. Photo 9 shows the intermediate station on the main circuit. The Brighton "Atlantic" with its train waits in the relief road for an express to pass. Photo 10 is another shot of the N.E.R. 0-6-0, out on the main line and going well with quite a hefty train behind her. Lastly, Photo 11 depicts another pre-war Bassett-Lowke controlled-clockwork model—the well-known L.N.W.R. *George the Fifth*—owned by Mr. F. R. Kaye.



FOR THE BOOKSHELF

The Locomotive Stock Book, 1952. Compiled and published by the Hon. Publicity Officer, Railway Correspondence and Travel Society, 88, Woodlands Road, Isleworth, Middlesex. Price 10s. 0d.

This latest edition of a very popular production covers the two-year period 1950-1. It is uniform in style with previous editions, the high standard of which is fully maintained. The book contains complete classified lists of the locomotive stocks of all railways in Great Britain as they were at December 31st, 1951. There are also statistical analyses, stock alterations for the two years, and lists of all named locomotives. As usual, the illustrations, which are excellent, depict each of the types of engines that became extinct during the period covered; in this case, no fewer than 90.

The amount of work put into the compilation of a book of this kind must be very great, not to mention the extreme care needed to ensure accuracy; the R.C.T.S. deserves all praise for its enterprise.

Railway Motive Power, By Harry Webster, B.Sc., M.I.Loco.E. (London: Hutchinson's Scientific and Technical Publications.) 311 pages, size 5½ in. by 8½ in. Illustrated. Price 30s. net.

At first sight, this book appears to be an admirable survey of the developments of railway motive power from the *Rocket* to the gas-turbine locomotive of today. A perusal of its pages, however, leaves the impression that the collation of the material was rather too gigantic a task for one author, because several errors and mis-statements of fact have, presumably, passed unnoticed. This is a pity, for it tends to destroy one's faith in the author's laudable intentions, especially in view of the fact that he has obviously written his text with the idea of commanding the attention of a very wide circle of non-technical readers.

The book is divided into three principal parts; the first discusses the very many aspects of the problem of providing motive power for railway purposes, and deals with the handling and performance of different kinds and types of locomotives. Part II deals with steam power and such matters as: early steam locomotives, later developments, outstanding examples, basic principles, design, boilers the engine, valve gear, present-day types and unusual locomotives. Part III covers developments in electric, diesel-electric and gas-turbine locomotives, while a glossary and index complete the literary content.

The main fault appears to lie in the author's praiseworthy attempts to avoid abstruse technicalities and, in the historical notes, desire to achieve brevity; the results are apt to be misleading if not actually inaccurate. For example, a gas-turbine depends on continuous combustion of the fuel and not upon spark ignition; *Gladstone* was not the *last* engine of her class, either built or in service; the chief reason for abandoning streamlining on locomotives was to facilitate maintenance and not as implied in this book; the measurements taken in dynamometer cars do not include the *pressure* of the wind, but its speed and direction; the memorable run of *Hardwicke* was made by that engine alone and not assisted by any other engine, and although the work of Churchward is frequently referred to, its real significance is not mentioned ! Finally, we notice that whenever the names of Cartazzi, de Glehn and Stumpff are mentioned, they are incorrectly spelt.

The photographic illustrations have been well selected, even though they are not particularly new. The line drawings are well reproduced and useful, but most of the sketches—and, in some cases, their captions—leave something to be desired.

Service Suspended. Edited by H. C. Casserley. (London: Ian Allan Ltd.) 40 pages, size 5 in. by 7¼ in. Price 2s. 6d.

This interesting and, to some extent, melancholy little book is primary a collection of photographic reproductions of scenes on branch lines and small independent railways over which passenger services have ceased to operate. Its editor calls it a " souvenir," and that very aptly describes it. There is an editorial introduction, and each illustration is given an extended descriptive caption. An alphabetical list of suspended services, and another of defunct railways, are included at the end.

Rail-Photo Album, No. 2. (London: Ian Allan Ltd.) 32 pages, size 5½ in. by 7½ in. Price 2s. 6d.

This is the second of the " Trains Illustrated " rail-photo albums containing a collection of 46 half-tone reproductions of photographs by several well-known railway photographers. These pictures cover a wide area, since trains of all kinds are depicted in every region of British Railways. Many of the pictures are charming because of their purely pictorial effect, others because of the interest of their subjects. The collection is certain to appeal to all railway enthusiasts.

The North Staffordshire Railway. By " Manifold." (Published by The Avian Press, Ashbourne, Derbyshire.) 182 pages. Coloured frontispiece. Fully illustrated. Price 25s. 8d. by post.

This book tells the history of the North Staffordshire Railway from 1848 until all vestige of the former sturdily independent railway had been lost as a result, first of grouping and then nationalisation. The N.S.R. may have been one of the minor railways of England in pre-grouping days, but its rugged individuality was a force to be reckoned with, not only in its own area but also for some considerable distance outside it; consequently, it came to be regarded with respect and affection by a wide circle of admirers, to most of whom it was known as " Old Knotty."

The name " Manifold " covers the identity of

five of the railway's most ardent admirers, some of whom were professionally connected with it. These five authors have combined forces, each making himself responsible for a particular section of this excellent book. The result is a thoroughly readable interesting and authentic history of lasting value, which cannot be said of a great deal of the railway "literature" produced in modern times.

We could wish that the rolling stock and some of the other distinctive features of "Old Knotty" could have been treated in the same elaborate manner as have the locomotives, but we realise that this is probably not possible for many reasons the chief of which is, quite likely, that the information no longer exists. For all that, the book is a worthy addition to the railway enthusiast's library.

WITH THE CLUBS

The Acton Model Engineering Society

The club premises at 86A, Churchfield Road, Acton, W.3, will be open on Tuesday evenings only during the summer months. Normal meeting nights, i.e. Tuesdays and Thursdays, will be resumed as from the firs tweek in October.

Hon. Secretary: A. LYON, 18, Midland Lane, Willesden Junction, N.W.10.

Exeter and District Model Engineer's Society

This society is holding an exhibition at the Friernhay Hall (off Fore Street), Exeter, from September 2nd to 13th inclusive.

This year we have been fortunate in procuring the loan of the British Railways' splendid "O" gauge model railway layout, and we are also showing a display of new models and new railway exhibits from the recently formed model railway section.

The exhibition will be open from 11 a.m. to 9.30 p.m. daily (except Sunday), and the charge for admission will be 1s. adults and 6d. for children under 14 years of age.

Neighbouring societies are cordially invited and should apply for further details to the Hon. Secretary, L. M. R. HISCOCKS, 5, Prince Charles Road, Exeter. Tel. 58811.

Epsom and Ewell Model Railway Club

A rummage sale will be held on September 18th during our meeting at Pit House, Cheam Road, Ewell. The usual informal discussion will probably be curtailed but any visitors who wish to attend will be welcomed by the members.

Hon. Secretary: P. D. MCCANN, 115, Elmstead Gardens, Worcester Park, Surrey.

Wimbledon Model Railway Club

Meetings are held at 7.30 p.m. on the second Wednesday of each month at 32, Worple Road, Wimbledon, S.W.19. The next meeting will be on September 10th when a talk on French railways will be given by a speaker from the London Office of the French Railways. At the meeting on October 8th we are to hear a talk on modern motor coach building by Mr. J. H. Guarnori. Visitors, as always, will be welcome at these meetings.

Further information about the club can be obtained from the Acting Hon. Secretary, R. C. J. DAY, 68, Chestnut Avenue, Esher, Surrey.

The Staines and District Society of Model Engineers and Craftsmen

The annual exhibition of the society will be held on September 13th, in the Kingston Road Primary School, Staines, from noon till nine. Entries are invited from anyone interested, for the open competition, in which cash prizes and diplomas are being offered. Details can be obtained from the hon. secretary. Loan models also welcomed. No meetings will be held during August, and the meetings recommence on September 3rd, at the Matthew Arnold School, Kingston Road, Staines. We are especially hoping for an influx of "OO" gauge enthusiasts during the coming season, and all will be welcome.

Hon. Secretary: R. F. SLADE, 166, Kingston Road, Staines, Middx. Tel.: Staines 3970.

The Leeds Model Railway Society

After a period of three months, when the society was without a room in which to hold the weekly meetings, it was found possible to obtain premises for our sole use and members are now actively engaged in the preparations for the exhibition. The weekly club meeting is on Wednesday at 7.30 p.m., and in addition there is a regular work night each Monday evening.

The society's exhibition is to be held in the Corn Exchange, Leeds, on November 6th, 7th and 8th, 1952, and arrangements are now well in hand. There will be eight or nine working layouts in "O" and "OO" gauges and it is expected that a large number of exhibits will be on show.

Individual items from modellers outside the club will be welcome and these will be covered by insurance both at the exhibition and during transit. Forms of entry and full particulars may be obtained from the Entry Secretary, Mr. D. Townsley, 201, Selby Road, Halton, Leeds, on application.

For other details of the society's activities apply to the Hon. Secretary, W. L. CROSS, 16, Far Moss, Alwoodley Park, Leeds. Phone 74677.

The Gauge One Model Railway Association

The association will be holding another "get-together" at Mr. K. R. Herring's garden layout at Cranleigh on Saturday, September 6th. All those wishing to go should communicate with the Hon. Secretary of the Association, S. J. ROBERTS, 82, Trinity Court, Gray's Inn Road, London, W.C.1.

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Readers desiring to see the Editor personally can only do so by making an appointment in advance.

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We Invite All "O" Gauge Model Railway Enthusiasts to write us on their locomotive problems. We are specialists in this gauge and offer an unrivalled "O" gaugers' service. We stock the Read-Maxwell motor, cast iron wheels, squared location in 10 sizes, stud contact collectors for any type of locomotive, chassis, etc. Send for our leaflets. 2½d. stamp, long envelope to—R. G. DETTMAR & Co., Ashtead, Surrey.

Staffordshire Model Shop. Est. 1936. Model railwaymen always welcome. Permanent "OO" layout. Open daily.—J. W. BAGNALL, Borough Carriage Works, South Walls Road, Stafford. Tel. 420. M.E.T.A.

Transformers for "direct" or "split potential." Rectifiers, auto cut-outs, ammeters, volt meters, reversing controllers, power units, large stocks. List, s.a.e.—HARRY GILPIN, 76, High Street, Walton-on-Naze, Essex.

Handyman's Shop, 27, Blakey Moor, Blackburn. Agents for Acro, Peco, ERG, Walkers, Wrenns, Hamblings, etc. Hardboard strips (all sizes for tracklaying).

"OO" Scale Locomotives at attractive prices. Hand built. Detailed 2- and 3-rail. Good selection all regions. Stamp details.—Box No. 6450, MODEL RAILWAY NEWS Offices.

South West of England "OO" specialists. Call, write or phone.—TORBAY MODEL RAILWAY SUPPLIES, 59, Victoria Road, Ellacombe, Torquay. Tel. 7764.

Pre-Grouping Coaches. "OO" card parts, all panelling embossed, N.E.R. 32' six-wheel brake van, 3s. 6d. Thirds clerestory, G.W.R. 46' 6", 4s. N.E.R. 45', 3s. 9d. Six-wheel L.S.W.R., G.N. of Scotland, 2s. 6d. per set. Post 3d.—HANSON, St. Agnes, 57, Sutherland Avenue, Fenham, Newcastle-on-Tyne.

America's Most Authoritative Magazine "Model Railroader" one year, post free 39s. Back numbers 3s. 6d. each. Free booklet of other American magazines from—WILLEN LTD., (Dept. 42), 101, Fleet Street, London, E.C.4.

Yeovil, Railway Modellers are invited to call. Agents for Trix, Peco, Rovex, Graham Farish.—"HINKS FOR RADIO," 36, Middle Street, Yeovil.

Rustless Alloy Rail. Flat bottom. Gauge "O"-10½". Small sizes ex-stock. Limited supplies of large sizes in August.—FENLOW PRODUCTS LTD., Weybridge, Surrey.

£100. "OO" two-rail equipment. Brand new. Never used. Best offer for lot. S.A.E.—PEACHEY, 116, Oxford Road, Calne, Wilts.

Lowke Steam "Enterprise." Little used, £5. "Model Railroader," back numbers, 2s. each. S.A.E. details.—LEWCOCK, Hazeland House, Kington St. Michael, Wilts.

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Gauge "O" Clockwork Layout (dismantled). Approximately 170' brass-track, battened including 16 points, 6 cross overs, £6 6s. Hornby "County" £2 2s. B.L. 0-6-0T, £3 3s. Bonzone, £1. Carriage extra.—35, Haldon Avenue, Teignmouth, Devon.

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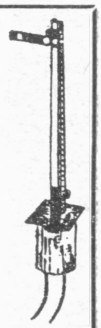

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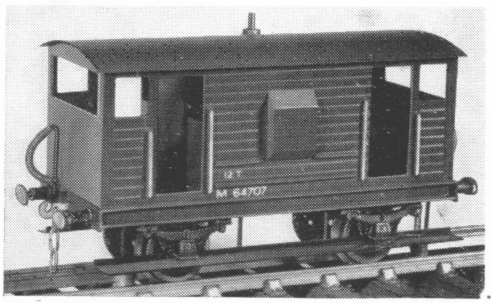

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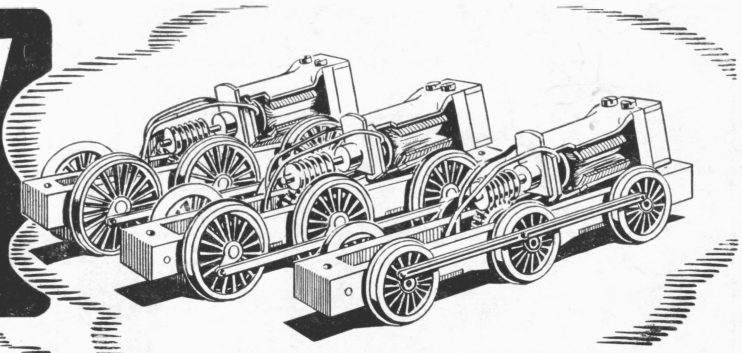

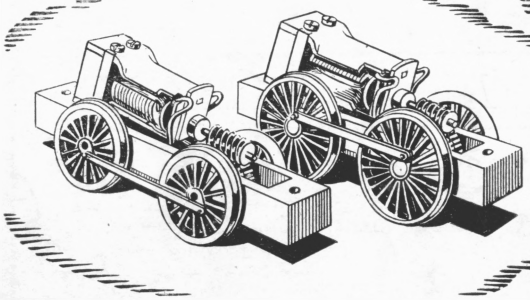

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